UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(**Mark One**)

☑ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended December 31, 2022

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission file number:
1-6523

Exact name of registrant as specified in its charter:

Bank of America Corporation

State or other jurisdiction of incorporation or organization:
Delaware
IRS Employer Identification No.:
56-0906609
Address of principal executive offices:
Bank of America Corporate Center
100 N. Tryon Street
Charlotte, North Carolina 28255
Registrant's telephone number, including area code:
(704) 386-5681
Securities registered pursuant to section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	BAC	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series E	BAC PrE	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 6.000% Non-Cumulative Preferred Stock, Series GG	BAC PrB	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 5.875% Non-Cumulative Preferred Stock, Series HH	BAC PrK	New York Stock Exchange
7.25% Non-Cumulative Perpetual Convertible Preferred Stock, Series L	BAC PrL	New York Stock Exchange
Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 1	BML PrG	New York Stock Exchange

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 2	BML PrH	New York Stock Exchange
Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 4	BML PrJ	New York Stock Exchange
Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 5	BML PrL	New York Stock Exchange
Floating Rate Preferred Hybrid Income Term Securities of BAC Capital Trust XIII (and the guarantee related thereto)	BAC/PF	New York Stock Exchange
5.63% Fixed to Floating Rate Preferred Hybrid Income Term Securities of BAC Capital Trust XIV (and the guarantee related thereto)	BAC/PG	New York Stock Exchange
Income Capital Obligation Notes initially due December 15, 2066 of Bank of America Corporation	MER PrK	New York Stock Exchange
Senior Medium-Term Notes, Series A, Step Up Callable Notes, due November 28, 2031 of BofA Finance LLC (and the guarantee of the Registrant with respect thereto)	BAC/31B	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 5.375% Non-Cumulative Preferred Stock, Series KK	BAC PrM	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 5.000% Non-Cumulative Preferred Stock, Series LL	BAC PrN	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 4.375% Non-Cumulative Preferred Stock, Series NN	BAC PrO	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 4.125% Non-Cumulative Preferred Stock, Series PP	BAC PrP	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 4.250% Non-Cumulative Preferred Stock, Series QQ	BAC PrQ	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a share of 4.750% Non-Cumulative Preferred Stock, Series SS	BAC PrS	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☑	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐
						Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☑

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 30, 2022, the aggregate market value of the registrant’s common stock (“Common Stock”) held by non-affiliates was approximately $250,136,457,342. At February 21, 2023, there were 8,003,839,222 shares of Common Stock outstanding.

Documents incorporated by reference: Portions of the definitive proxy statement relating to the registrant’s 2023 annual meeting of shareholders are incorporated by reference in this Form 10-K in response to Items 10, 11, 12, 13 and 14 of Part III.

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Part I

Bank of America Corporation and Subsidiaries

Item 1. Business

Bank of America Corporation is a Delaware corporation, a bank holding company (BHC) and a financial holding company. When used in this report, "Bank of America," "the Corporation," "we," "us" and "our" may refer to Bank of America Corporation individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates. As part of our efforts to streamline the Corporation's organizational structure and reduce complexity and costs, the Corporation has reduced and intends to continue to reduce the number of its corporate subsidiaries, including through intercompany mergers.

Bank of America is one of the world's largest financial institutions, serving individual consumers, small- and middle-market businesses, institutional investors, large corporations and governments with a full range of banking, investing, asset management and other financial and risk management products and services. Our principal executive offices are located in the Bank of America Corporate Center, 100 North Tryon Street, Charlotte, North Carolina 28255.

Bank of America's website is www.bankofamerica.com, and the Investor Relations portion of our website is https://investor.bankofamerica.com. We use our website to distribute company information, including as a means of disclosing material, non-public information and for complying with our disclosure obligations under Regulation FD. We routinely post and make accessible financial and other information, including environmental, social and governance (ESG) information, regarding the Corporation on our website. Investors should monitor our website, including the Investor Relations portion of our website, in addition to our press releases, U.S. Securities and Exchange Commission (SEC) filings, public conference calls and webcasts. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (Exchange Act) are available on the Investor Relations portion of our website as soon as reasonably practicable after we electronically file such reports with, or furnish them to, the SEC and at the SEC's website, www.sec.gov. Notwithstanding the foregoing, the information contained on our website as referenced in this paragraph, or otherwise in this Annual Report on Form 10-K, is not incorporated by reference into this Annual Report on Form 10-K. Also, we make available on the Investor Relations portion of our website: (i) our Code of Conduct; (ii) our Corporate Governance Guidelines; and (iii) the charter of each active committee of our Board of Directors (the Board). Our Code of Conduct constitutes a "code of ethics" and a "code of business conduct and ethics" that applies to the required individuals associated with the Corporation for purposes of the respective rules of the SEC and the New York Stock Exchange. We also intend to disclose any amendments to our Code of Conduct and waivers of our Code of Conduct required to be disclosed by the rules of the SEC and the New York Stock Exchange on the Investor Relations portion of our website. All of these corporate governance materials are also available free of charge in print to shareholders who request them in writing to: Bank of America Corporation, Attention: Office of the Corporate Secretary, Bank of America Corporate Center, 100 North Tryon Street, NC1-007-56-06, Charlotte, North Carolina 28255.

Segments

Through our various bank and nonbank subsidiaries throughout the U.S. and in international markets, we provide a diversified range of banking and nonbank financial services and products through four business segments: *Consumer Banking*, *Global Wealth & Investment Management (GWIM)*, *Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*. Additional information related to our business segments and the products and services they provide is included in the information set forth on pages 37 through 46 of Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) and *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Competition

We operate in a highly competitive environment. Our competitors include banks, thrifts, credit unions, investment banking firms, investment advisory firms, brokerage firms, investment companies, insurance companies, mortgage banking companies, credit card issuers, mutual fund companies, hedge funds, private equity firms, and e-commerce and other internet-based companies, including merchant banks and companies providing nonbank financial services. We compete with some of these competitors globally and with others on a regional or product-specific basis. We are increasingly competing with firms offering products solely over the internet and with non-financial companies, including firms utilizing emerging technologies, such as digital assets, rather than, or in addition to, traditional banking products.

Competition is based on a number of factors including, among others, customer service and convenience, the pricing, quality and range of products and services offered, lending limits, the quality and delivery of our technology and our reputation, experience and relationships in relevant markets. Our ability to continue to compete effectively also depends in large part on our ability to attract new employees and develop, retain and motivate our existing employees, while managing compensation and other costs.

Human Capital Resources

We strive to make Bank of America a great place to work for our employees. We value our employees and seek to establish and maintain human resource policies that are consistent with our core values and help to realize the power of our people. Our Board and its Compensation and Human Capital Committee provide oversight of our human capital management strategies, programs and practices. The Corporation's senior management provides regular briefings on human capital matters to the Board and its Committees to facilitate the Board's oversight.

At December 31, 2022 and 2021, the Corporation employed approximately 217,000 and 208,000 employees, of which 79 percent and 80 percent were located in the U.S. None of our U.S. employees are subject to a collective bargaining agreement. Additionally, in 2022 and 2021, the Corporation's compensation and benefits expense was $36.4 billion and $36.1 billion, or 59 percent and 61 percent, of total noninterest expense.

Diversity and Inclusion

The Corporation's commitment to diversity and inclusion starts at the top with oversight from our Board and CEO. The Corporation's senior management sets the diversity and inclusion goals, and the Chief Human Resources Officer and Chief Diversity & Inclusion Officer partner with our CEO and senior management to drive our diversity and inclusion strategy, programs, initiatives and policies. The Global Diversity and Inclusion Council, which consists of senior executives from every line of business and region, is chaired by our CEO and has been in place for over 20 years. The Council sponsors and supports business, operating unit and regional diversity and inclusion councils to align with enterprise diversity strategies and goals.

Our practices and policies have resulted in strong representation across the Corporation where our broad employee population mirrors the clients and communities we serve. We have a Board and senior management team that are 53 percent and 55 percent racially, ethnically and gender diverse. The following table presents diversity metrics for our global employees who self-identified as women and our U.S.-based employees who self-identified as people of color, including those who self-identified as Asian, Black/African American and Hispanic/Latino. These workforce diversity metrics are reported regularly to the senior management team and to the Board.

Diversity Metrics as of December 31, 2022

	Total Employees	Top Three Management Levels	Managers at All Levels
Global employees			
Women	50 %	42 %	42 %
U.S.-based employees			
People of color	50	26	42
Asian	14	11	14
Black/African American	14	8	10
Hispanic/Latino	19	6	16

We invest in our talent by offering a range of development programs and resources that allow employees to develop and progress in their careers. We reinforce our commitment to diversity and inclusion by investing internally in our employee networks and by facilitating enterprise-wide learning and conversations about various diversity and inclusion topics and issues. Further, we partner with various external organizations, which focus on advancing diverse talent. We also have practices in place for attracting and retaining diverse talent, including campus recruitment. For example, in 2022, 44 percent of our global campus hires were women and, in the U.S., 59 percent were people of color.

Employee Engagement and Talent Retention

As part of our ongoing efforts to make the Corporation a great place to work, we have conducted a confidential annual Employee Engagement Survey (Survey) for nearly two decades. The Survey results are reviewed by the Board and senior management and used to assist in reviewing the Corporation's human capital strategies, programs and practices. In 2022, 85 percent of the Corporation's employees participated in the Survey, and our Employee Engagement Index, an overall measure of employee satisfaction with the Corporation, was 85 percent. Our turnover among employees was 13 percent in 2022 and 12 percent in 2021.

Additionally, the Corporation provides a variety of resources to help employees grow in their current roles and build new skills, including resources to help employees find new opportunities, re-skill and seek leadership positions. The learning and development strategy is grounded in the development of horizontal skills delivered throughout the organization. Senior leaders, managers and teammates are onboarded and build horizontal skills, as well as role-specific skills, to help drive high performance. This approach also helps facilitate internal mobility and promotion of talent to build a bench of qualified managers and leaders. In 2022, more than 30,000 employees found new roles within the Corporation, and we delivered more than 11 million hours of training and development to our teammates through Bank of America Academy. Additionally, our Board oversees CEO and senior management succession planning, which is formally reviewed at least annually.

Fair and Equitable Compensation

The Corporation is committed to racial and gender pay equity by striving to compensate all of our employees fairly and equitably. We maintain robust policies and practices that reinforce our commitment, including reviews conducted by a third-party consultant with oversight from our Board and senior management. In 2022, our review covered our regional hubs (U.S., U.K., France, Ireland, Hong Kong and Singapore) and India and showed that compensation received by women, on average, was greater than 99 percent of that received by men in comparable positions. In the U.S., compensation received by people of color was, on average, greater than 99 percent of that received by teammates who are not people of color in comparable positions.

We also strive to pay our employees fairly based on market rates for their roles, experience and how they perform. We regularly benchmark against other companies both within and outside our industry to help confirm our pay is competitive. In 2021, the Corporation announced it would increase its minimum hourly wage for U.S. employees to $25 per hour by 2025. In June 2022, as a next step, the Corporation increased its hourly minimum wage for U.S. employees to $22 per hour. In addition, in January 2023, for the sixth year since 2017, we announced that we recognized our teammates with Sharing Success compensation awards for their efforts during 2022. Approximately 96 percent of employees globally will receive an award in the first quarter of 2023.

Health and Wellness – 2022 Focus

The Corporation is also committed to supporting employees' physical, emotional and financial wellness by offering flexible and competitive benefits, including comprehensive health and insurance benefits and wellness resources. During 2022, we continued efforts to support our employees through the ongoing health crisis resulting from Coronavirus Disease 2019 (COVID-19). We provided no-cost COVID-19 testing and teammates with incentives for getting the vaccine and booster. We also held on-site flu and COVID-19 vaccine and booster clinics.

We continued our efforts around providing affordable access to healthcare, including offering no-cost, 24/7 access to virtual general medical and behavioral health resources to help our enrolled U.S. teammates stay healthy, both physically and emotionally. We kept U.S. health insurance premiums unchanged for teammates earning less than $50,000 for the tenth year in a row, and had nominal premium increases for teammates earning from $50,000 up to $100,000 for the sixth year in a row. We provided in-network generic prescription medications at no cost for teammates enrolled in a U.S. bank medical PPO or Consumer Direct plan, along with continuing preventative care medications at no cost for all U.S. medical plans.

We offer an extensive benefit package and support work-life balance for our teammates, which includes in the U.S., 16 weeks of paid parental leave for both primary and secondary caregivers and backup dependent care (50 days of child and adult backup care per year). We doubled the number of no-cost confidential counseling sessions from six to 12 for all employees and family members and now offer 12 globally.

For more information about our human capital management, see the Corporation's website and 2022 Annual Report to shareholders that will be available on the Investor Relations portion of our website in March 2023 (the content of which is not incorporated by reference into this Annual Report on Form 10-K).

Government Supervision and Regulation

The following discussion describes, among other things, elements of an extensive regulatory framework applicable to BHCs, financial holding companies, banks and broker-dealers, including specific information about Bank of America.

We are subject to an extensive regulatory framework applicable to BHCs, financial holding companies and banks and other financial services entities. U.S. federal regulation of banks, BHCs and financial holding companies is intended primarily for the protection of depositors and the Deposit Insurance Fund (DIF) rather than for the protection of shareholders and creditors.

As a registered financial holding company and BHC, the Corporation is subject to the supervision of, and regular inspection by, the Board of Governors of the Federal Reserve System (Federal Reserve). Our U.S. bank subsidiaries (the Banks), organized as national banking associations, are subject to regulation, supervision and examination by the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC) and the Federal Reserve. In addition, the Federal Reserve and the OCC have adopted guidelines that establish minimum standards for the design, implementation and board oversight of BHCs' and national banks' risk governance frameworks. U.S. financial holding companies, and the companies under their control, are permitted to engage in activities considered "financial in nature" as defined by the Gramm-Leach-Bliley Act and related Federal Reserve interpretations. The Corporation's status as a financial holding company is conditioned upon maintaining certain eligibility requirements for both the Corporation and its U.S. depository institution subsidiaries, including minimum capital ratios, supervisory ratings and, in the case of the depository institutions, at least satisfactory Community Reinvestment Act ratings. Failure to be an eligible financial holding company could result in the Federal Reserve limiting Bank of America's activities, including potential acquisitions. Additionally, we are subject to a significant number of laws, rules and regulations that govern our businesses in the U.S. and in the other jurisdictions in which we operate, including permissible activities, minimum levels of capital and liquidity, compliance risk management, consumer products and sales practices, anti-money laundering and anti-corruption, government sanctions, privacy, data protection and executive compensation, among others.

The scope of the laws and regulations and the intensity of the supervision to which we are subject have increased over the past several years, beginning with the response to the 2008 financial crisis, as well as other factors such as technological and market changes. In addition, the banking and financial services sector is subject to substantial regulatory enforcement and fines. Many of these changes have occurred as a result of the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (the Financial Reform Act). We cannot assess whether there will be any additional major changes in the regulatory environment and expect that our business will remain subject to continuing and extensive regulation and supervision.

We are also subject to various other laws and regulations, as well as supervision and examination by other regulatory agencies, all of which directly or indirectly affect our entities, management and ability to make distributions to shareholders. For instance, our broker-dealer subsidiaries are subject to both U.S. and international regulation, including supervision by the SEC, Financial Industry Regulatory Authority and New York Stock Exchange, among others; our futures commission merchant subsidiaries supporting commodities and derivatives businesses in the U.S. are subject to regulation by and supervision of the U.S. Commodity Futures Trading Commission (CFTC), National Futures Association, the Chicago Mercantile Exchange, and in the case of the Banks, certain banking regulators; our insurance activities are subject to licensing and regulation by state insurance regulatory agencies; and our consumer financial products and services are regulated by the Consumer Financial Protection Bureau (CFPB).

Our non-U.S. businesses are also subject to extensive regulation by various non-U.S. regulators, including governments, securities exchanges, prudential regulators, central banks and other regulatory bodies, in the jurisdictions in which those businesses operate. For example, our financial services entities in the United Kingdom (U.K.), Ireland and France are subject to regulation by the Prudential Regulatory Authority and Financial Conduct Authority (FCA), the European Central Bank and Central Bank of Ireland, and the Autorité de Contrôle Prudentiel et de Résolution and Autorité des Marchés Financiers, respectively.

Source of Strength

Under the Financial Reform Act and Federal Reserve policy, BHCs are expected to act as a source of financial strength to each subsidiary bank and to commit resources to support each such subsidiary. Similarly, under the cross-guarantee provisions of the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), in the event of a loss suffered or anticipated by the FDIC, either as a result of default of a bank subsidiary or related to FDIC assistance provided to such a subsidiary in danger of default, the affiliate banks of such a subsidiary may be assessed for the FDIC's loss, subject to certain exceptions.

Transactions with Affiliates

Pursuant to Section 23A and 23B of the Federal Reserve Act, as implemented by the Federal Reserve's Regulation W, the Banks are subject to restrictions that limit certain types of transactions between the Banks and their nonbank affiliates. In general, U.S. banks are subject to quantitative and qualitative limits on extensions of credit, purchases of assets and certain other transactions involving their nonbank affiliates. Additionally, transactions between U.S. banks and their nonbank affiliates are required to be on arm's length terms and must be consistent with standards of safety and soundness.

Deposit Insurance

Deposits placed at U.S. domiciled banks are insured by the FDIC, subject to limits and conditions of applicable law and the FDIC's regulations. Pursuant to the Financial Reform Act, FDIC insurance coverage limits are $250,000 per depositor, per insured bank for each account ownership category. All insured depository institutions are required to pay assessments to the FDIC in order to fund the DIF.

The FDIC is required to maintain a statutory minimum ratio of the DIF to insured deposits in the U.S. of at least 1.35 percent and has established a long-term goal of a two percent DIF ratio. As of the date of this report, the DIF is below the statutory minimum ratio and the FDIC's long-term goal. In October 2022, the FDIC adopted a restoration plan that includes an increase in deposit insurance assessments across the industry of two basis points (bps). The FDIC has indicated that it intends to maintain such assessment rates for the foreseeable future. Deposit insurance assessment rates are subject to change by the FDIC and will be impacted by the overall economy and the stability of the banking industry as a whole. For more information regarding deposit insurance, see Item 1A. Risk Factors – Regulatory, Compliance and Legal on page 17.

Capital, Liquidity and Operational Requirements

As a financial holding company, we and our bank subsidiaries are subject to the regulatory capital and liquidity rules issued by the Federal Reserve and other U.S. banking regulators, including the OCC and the FDIC. These rules are complex and are evolving as U.S. and international regulatory authorities propose and enact amendments to these rules. The Corporation seeks to manage its capital position to maintain sufficient capital to satisfy these regulatory rules and to support our business activities. These continually evolving rules are likely to influence our planning processes and may require additional regulatory capital and liquidity, as well as impose additional operational and compliance costs on the Corporation.

For more information on regulatory capital rules, capital composition and pending or proposed regulatory capital changes, see Capital Management on page 49, and *Note 16 – Regulatory Requirements and Restrictions* to the Consolidated Financial Statements, which are incorporated by reference in this Item 1.

Distributions

We are subject to various regulatory policies and requirements relating to capital actions, including payment of dividends and common stock repurchases. For instance, Federal Reserve regulations require major U.S. BHCs to submit a capital plan as part of an annual Comprehensive Capital Analysis and Review (CCAR).

Our ability to pay dividends and make common stock repurchases depends in part on our ability to maintain regulatory capital levels above minimum requirements plus buffers and non-capital standards established under the FDICIA. To the extent that the Federal Reserve increases our stress capital buffer (SCB), global systemically important bank (G-SIB) surcharge or countercyclical capital buffer, our returns of capital to shareholders, including dividends and common stock repurchases, could decrease. As part of its CCAR, the Federal Reserve conducts stress testing on parts of our business using hypothetical economic scenarios prepared by the Federal Reserve. Those scenarios may affect our CCAR stress test results, which may impact the level of our SCB. For example, based on the results of our 2022 CCAR stress test, the Corporation's SCB increased to 3.4 percent, and the Corporation's G-SIB surcharge is expected to increase to 3.0 percent on January 1, 2024. Additionally, the Federal Reserve could impose limitations or prohibitions on taking capital actions such as paying or increasing dividends or repurchasing common stock. For example, as a result of the economic uncertainty resulting from the pandemic, in the second half of 2020, the Federal Reserve introduced certain limitations to capital distributions for all large banks, including the Corporation, which were removed effective July 1, 2021.

If the Federal Reserve finds that any of our Banks are not "well-capitalized" or "well-managed," we would be required to enter into an agreement with the Federal Reserve to comply with all applicable capital and management requirements, which may contain additional limitations or conditions relating to our activities. Additionally, the applicable federal regulatory authority is authorized to determine, under certain circumstances relating to the financial condition of a bank or BHC, that the payment of dividends would be an unsafe or unsound practice and to prohibit payment thereof.

For more information regarding the requirements relating to the payment of dividends, including the minimum capital requirements, see *Note 13 – Shareholders' Equity* and *Note 16 – Regulatory Requirements and Restrictions* to the Consolidated Financial Statements.

Many of our subsidiaries, including our bank and broker-dealer subsidiaries, are subject to laws that restrict dividend payments, or authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to the parent company or other subsidiaries. The rights of the Corporation, our shareholders and our creditors to participate in any distribution of the assets or earnings of our subsidiaries are further subject to the prior claims of creditors of the respective subsidiaries.

Resolution Planning

As a BHC with greater than $250 billion of assets, the Corporation is required by the Federal Reserve and the FDIC to periodically submit a plan for a rapid and orderly resolution in the event of material financial distress or failure.

Such resolution plan is intended to be a detailed roadmap for the orderly resolution of the BHC, including the continued operations or solvent wind down of its material entities, pursuant to the U.S. Bankruptcy Code under one or more hypothetical scenarios assuming no extraordinary government assistance.

If both the Federal Reserve and the FDIC determine that the BHC's plan is not credible, the Federal Reserve and the FDIC may jointly impose more stringent capital, leverage or liquidity requirements or restrictions on growth, activities or operations. A summary of our plan is available on the Federal Reserve and FDIC websites.

The FDIC also requires the submission of a resolution plan for Bank of America, National Association, which must describe how the insured depository institution would be resolved under the bank resolution provisions of the Federal Deposit Insurance Act. A description of this plan is available on the FDIC's website.

We continue to make substantial progress to enhance our resolvability, which includes continued improvements to our preparedness capabilities to implement our resolution plan, both from a financial and operational standpoint.

Across international jurisdictions, resolution planning is the responsibility of national resolution authorities (RA). Among those, the jurisdictions with the greatest impact to the Corporation's subsidiaries are the U.K., Ireland and France, where rules have been issued requiring the submission of significant information about locally incorporated subsidiaries as well as the Corporation's banking branches located in those jurisdictions that are deemed to be material for resolution planning purposes. As a result of the RA's review of the submitted information, we could be required to take certain actions over the next several years that could increase operating costs and potentially result in the restructuring of certain businesses and subsidiaries.

For more information regarding our resolution plan, see Item 1A. Risk Factors – Liquidity on page 9.

Insolvency and the Orderly Liquidation Authority

Under the Federal Deposit Insurance Act, the FDIC may be appointed receiver of an insured depository institution if it is insolvent or in certain other circumstances. In addition, under the Financial Reform Act, when a systemically important financial institution (SIFI) such as the Corporation is in default or danger of default, the FDIC may be appointed receiver in order to conduct an orderly liquidation of such institution. In the event of such appointment, the FDIC could, among other things, invoke the orderly liquidation authority, instead of the U.S. Bankruptcy Code, if the Secretary of the Treasury makes certain financial distress and systemic risk determinations. The orderly liquidation authority is modeled in part on the Federal Deposit Insurance Act, but also adopts certain concepts from the U.S. Bankruptcy Code.

The orderly liquidation authority contains certain differences from the U.S. Bankruptcy Code. For example, in certain circumstances, the FDIC could permit payment of obligations it determines to be systemically significant (e.g., short-term creditors or operating creditors) in lieu of paying other obligations (e.g., long-term creditors) without the need to obtain creditors' consent or prior court review. The insolvency and resolution process could also lead to a large reduction or total elimination of the value of a BHC's outstanding equity, as well as impairment or elimination of certain debt.

Under the FDIC's "single point of entry" strategy for resolving SIFIs, the FDIC could replace a distressed BHC with a bridge holding company, which could continue operations and result in an orderly resolution of the underlying bank, but whose equity is held solely for the benefit of creditors of the original BHC.

Furthermore, the Federal Reserve requires that BHCs maintain minimum levels of long-term debt required to provide adequate loss absorbing capacity in the event of a resolution.

For more information regarding our resolution, see Item 1A. Risk Factors – Liquidity on page 9.

Limitations on Acquisitions

The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 permits a BHC to acquire banks located in states other than its home state without regard to state law, subject to certain conditions, including the condition that the BHC, after and as a result of the acquisition, controls no more than 10 percent of the total amount of deposits of insured depository institutions in the U.S. and no more than 30 percent or such lesser or greater amount set by state law of such deposits in that state. At June 30, 2022, we held greater than 10 percent of the total amount of deposits of insured depository institutions in the U.S.

In addition, the Financial Reform Act restricts acquisitions by a financial institution if, as a result of the acquisition, the total liabilities of the financial institution would exceed 10 percent of the total liabilities of all financial institutions in the U.S. At June 30, 2022, our liabilities did not exceed 10 percent of the total liabilities of all financial institutions in the U.S.

The Volcker Rule

The Volcker Rule prohibits insured depository institutions and companies affiliated with insured depository institutions (collectively, banking entities) from engaging in short-term proprietary trading of certain securities, derivatives, commodity futures and options for their own account. The Volcker Rule also imposes limits on banking entities' investments in, and other relationships with, hedge funds and private equity funds. The Volcker Rule provides exemptions for certain activities, including market making, underwriting, hedging, trading in government obligations, insurance company activities and organizing and offering hedge funds and private equity funds. The Volcker Rule also clarifies that certain activities are not prohibited, including acting as agent, broker or custodian. A banking entity with significant trading operations, such as the Corporation, is required to maintain a detailed compliance program to comply with the restrictions of the Volcker Rule.

Derivatives

Our derivatives operations are subject to extensive regulation globally. These operations are subject to regulation under the Financial Reform Act, the European Union (EU) Markets in Financial Instruments Directive and Regulation, the European Market Infrastructure Regulation, analogous U.K. regulatory regimes and similar regulatory regimes in other jurisdictions that regulate or will regulate the derivatives markets in which we operate by, among other things: requiring clearing and exchange trading of certain derivatives; enforcing existing or imposing new capital, margin, reporting, registration and business conduct requirements for certain market participants; imposing position limits on certain derivatives; and imposing derivatives trading transparency requirements. These regulations are already in effect in many markets in which we operate.

In addition, many G-20 jurisdictions, including the U.S., U.K., and Japan, have adopted resolution stay regulations to address concerns that the close-out of derivatives and other financial contracts in resolution could impede orderly resolution of G-SIBs, and additional jurisdictions are expected to follow suit. In addition, the EU has implemented EU-wide resolution stay requirements. Generally, these resolution stay regulations require amendment of certain financial contracts to provide for contractual recognition of stays of termination rights under various statutory resolution regimes and a stay on the exercise of cross-default rights based on an affiliate's entry into insolvency proceedings. Resolution regulations may also require contractual recognition by the counterparty that amounts owed may be written down or converted into equity as part of a bail in. As resolution stay regulations of a particular jurisdiction applicable to us go into effect, we amend impacted financial contracts in compliance with such regulations either as a regulated entity or as a counterparty facing a regulated entity in such jurisdiction.

Consumer Regulations

Our consumer businesses are subject to extensive regulation and oversight by federal and state regulators. Certain federal consumer finance laws to which we are subject, including the Equal Credit Opportunity Act, Home Mortgage Disclosure Act, Electronic Fund Transfer Act, Fair Credit Reporting Act, Real Estate Settlement Procedures Act, unfair, deceptive, or abusive acts or practices (UDAAP), Truth in Lending Act and Truth in Savings Act, are enforced by the CFPB. Other federal consumer finance laws, such as the Servicemembers Civil Relief Act, are enforced by the OCC.

Privacy and Information Security

We are subject to many U.S. federal, state and international laws and regulations governing requirements for maintaining policies and procedures regarding the disclosure, use and protection of the non-public confidential information of our customers and employees. The Gramm-Leach-Bliley Act requires us to periodically disclose Bank of America's privacy policies and practices relating to sharing such information and enables retail customers to opt out of our ability to share information with unaffiliated third parties, under certain circumstances. The Gramm-Leach-Bliley Act and other laws also require us to implement a comprehensive information security program that includes administrative, technical and physical safeguards to provide the security and confidentiality of customer records and information. Security and privacy policies and procedures for the protection of personal and confidential information are in effect across all businesses and geographic locations.

Other laws and regulations, at the international, federal and state level, impact our ability to share certain information with affiliates and non-affiliates for marketing and/or non-marketing purposes, or contact customers with marketing offers and establish certain rights of consumers in connection with their personal information. For example, California's Consumer Privacy Act (CCPA), as modified by the California Privacy Rights Act (CPRA), provides consumers with the right to know what personal data is being collected, know whether their personal data is sold or disclosed and to whom and opt out of the sale of their personal data, among other rights. In addition, in the EU, the General Data Protection Regulation (GDPR) replaced the Data Protection Directive and related implementing national laws in its member states. The CCPA's, CPRA's and GDPR's impact on the Corporation was assessed and addressed through comprehensive compliance implementation programs. These existing and evolving legal requirements in the U.S. and abroad, as well as court proceedings and changing guidance from regulatory bodies with respect to the validity of cross-border data transfer mechanisms from the EU, continue to lend uncertainty to privacy compliance globally.

Item 1A. Risk Factors

The discussion below addresses our material risk factors of which we are aware. Any risk factor, either by itself or together with other risk factors, could materially and adversely affect our businesses, results of operations, cash flows and/or financial condition. References to third parties may include their upstream and downstream service providers who may also contribute to our risks. Other factors not currently known to us or that we currently deem immaterial could also adversely affect our businesses, results of operations, cash flows and/or financial condition. Therefore, the risk factors below should not be considered all of the potential risks that we may face. For more information on how we manage risks, see Managing Risk in the MD&A on page 46. For more information about the risks contained in the Risk Factors section, see Item 1. Business on page 2, MD&A on page 26 and Notes to Consolidated Financial Statements on page 94.

Market

We may be adversely affected by the financial markets, fiscal, monetary, and regulatory policies, and economic conditions.

General economic, political, social and health conditions in the U.S. and abroad affect financial markets and our business. In particular, global markets may be affected by the level and volatility of interest rates, availability and market conditions of financing, changes in gross domestic product (GDP), economic growth or its sustainability, inflation, supply chain disruptions, consumer spending, employment levels, labor shortages, challenging labor market conditions, wage stagnation, federal government shutdowns, energy prices, home prices, commercial property values, bankruptcies, a default by a significant market participant or class of counterparties, including companies in emerging markets, fluctuations or other significant changes in both debt and equity capital markets and currencies, liquidity, the continued transition from InterBank Offered Rates (IBORs) and other benchmark rates to alternative reference rates (ARRs), the impact of volatility of digital assets on the broader market, the growth of global trade and commerce, trade policies, the availability and cost of capital and credit, disruption of communication, transportation or energy infrastructure, recessionary fears and investor sentiment. Global markets, including energy and commodity markets, may be adversely affected by the current or anticipated impact of climate change, acute and/or chronic extreme weather events or natural disasters, the emergence or continuation of widespread health emergencies or pandemics, cyberattacks, military conflict, terrorism, or other geopolitical events. Market fluctuations may impact our margin requirements and affect our liquidity. Any sudden or prolonged market downturn, as a result of the above factors or otherwise, could result in a decline in net interest income and noninterest income and adversely affect our results of operations and financial condition, including capital and liquidity levels. High inflation, elevated interest rate levels, supply chain disruptions, and the Russia/Ukraine conflict, including the related energy impact in Europe, have adversely impacted and may continue to adversely impact financial markets and macroeconomic conditions and could result in additional market volatility and disruptions.

Global uncertainties regarding fiscal and monetary policies present economic challenges. Actions taken by the Federal Reserve or other central banks, including changes in target rates, balance sheet management and lending facilities, are beyond our control and difficult to predict, particularly in a high inflation environment. This can affect interest rates and the value of financial instruments and other assets, such as debt securities, and impact our borrowers and potentially increase delinquency rates and may also raise government debt levels, adversely affect businesses and household incomes and increase uncertainty surrounding monetary policy. Monetary policy in response to high inflation has led to a significant increase in market interest rates and a flattening and/or inversion of the yield curve. This has resulted in and may continue to result in volatility of equity and other markets, further volatility of the U.S. dollar, a widening in credit spreads and higher interest rates and recessionary concerns, and could result in elevated unemployment, which could impact investor risk appetite and our borrowers, potentially increasing delinquency rates. It is also possible that high inflation may limit the scope of monetary support, including cuts to the federal funds rate, in the event of an economic downturn, resulting in a more protracted period of a flat and/or inverted yield curve.

Any future change in monetary policy by the Federal Reserve, in an effort to stimulate the economy or otherwise, resulting in lower interest rates would likely result in lower revenue through lower net interest income, which could adversely affect our results of operations. Additionally, changes to existing U.S. laws and regulatory policies and evolving priorities, including those related to financial regulation, taxation, international trade, fiscal policy, climate change (including efforts to transition to a low-carbon economy) and healthcare, may adversely impact U.S. or global economic activity and our customers', our counterparties' and our earnings and operations. Globally, many central banks are simultaneously reducing monetary accommodation through interest rate or balance sheet policy, which has contributed and may continue to contribute to elevated financial and capital market volatility and significant changes to asset values. While higher interest rates have positively impacted our net interest income, higher interest rates have negatively impacted and could continue to negatively impact deposits, loan demand and funding costs. If the U.S. government's debt ceiling limit is not raised, the ramifications could result in market volatility, ratings downgrades and limit fiscal policy responses to recessionary conditions. This could have a negative and potentially severe impact on the U.S. and world economy and financial and capital markets, including higher interest rates, higher volatility, lower asset values, lower liquidity, downgrades to U.S. debt, and a weakened U.S. dollar.

Changes to international trade and investment policies by the U.S. could negatively impact financial markets. Escalation of tensions between the U.S. and the People's Republic of China (China) could lead to further U.S. measures that adversely affect financial markets, disrupt world trade and commerce and lead to trade retaliation, including through the use of tariffs, foreign exchange measures or the large-scale sale of U.S. Treasury bonds. Any restrictions on the activities of businesses, could also negatively affect financial markets.

These developments could adversely affect our businesses, customers, securities and derivatives portfolios, including the risk of lower re-investment rates within those portfolios, our level of charge-offs and provision for credit losses, the carrying value of our deferred tax assets, our capital levels, our liquidity and our results of operations.

Increased market volatility and adverse changes in financial or capital market conditions may increase our market risk.

Our liquidity, competitive position, business, results of operations and financial condition are affected by market risks such as changes in interest and currency exchange rates, fluctuations in equity, commodity and futures prices, trading volumes and prices of securitized products, the implied volatility of interest rates and credit spreads and other economic and

business factors. These market risks may adversely affect, among other things, the value of our securities, including our on- and off-balance sheet securities, trading assets and other financial instruments, the cost of debt capital and our access to credit markets, the value of assets under management (AUM), fee income relating to AUM, customer allocation of capital among investment alternatives, the volume of client activity in our trading operations, investment banking, underwriting and other capital market fees, which have already been negatively impacted, the general profitability and risk level of the transactions in which we engage and our competitiveness with respect to deposit pricing. The value of certain of our assets is sensitive to changes in market interest rates. If the Federal Reserve or a non-U.S. central bank changes or signals a change in monetary policy, market interest rates or credit spreads could be affected, which could adversely impact the value of such assets. Changes to fiscal policy, including expansion of U.S. federal deficit spending and resultant debt issuance, could also affect market interest rates. If interest rates decrease, our results of operations could be negatively impacted, including future revenue and earnings growth. The continued flattening and/or inversion of the yield curve could also negatively impact our results of operations, including revenue and earnings.

Our models and strategies to assess and control our market risk exposures are subject to inherent limitations. In times of market stress or other unforeseen circumstances, previously uncorrelated indicators may become correlated and vice versa. Such changes to the relationship between market parameters may limit the effectiveness of our hedging strategies and cause us to incur significant losses. Changes in correlation can be exacerbated where market participants use risk or trading models with assumptions or algorithms similar to ours. In these and other cases, it may be difficult to reduce our risk positions due to activity of other market participants or widespread market dislocations, including circumstances where asset values are declining significantly or no market exists. Where we own securities that do not have an established liquid trading market or are otherwise subject to restrictions on sale or hedging, or where the degree of accessible liquidity declines significantly, we may not be able to reduce our positions and risks associated with such holdings, so we may suffer larger than expected losses when adverse price movements take place. This risk can be exacerbated where we hold a position that is large relative to the available liquidity.

If asset values decline, we may incur losses and negative impacts to capital and liquidity requirements.

We have a large portfolio of financial instruments, including loans and loan commitments, securities financing agreements, asset-backed secured financings, derivative assets and liabilities, debt securities, marketable equity securities and certain other assets and liabilities that we measure at fair value and are subject to valuation and impairment assessments. We determine these values based on applicable accounting guidance, which, for financial instruments measured at fair value, requires an entity to base fair value on exit price and to maximize the use of observable inputs and minimize the use of unobservable inputs in fair value measurements. The fair values of these financial instruments include adjustments for market liquidity, credit quality, funding impact on certain derivatives and other transaction-specific factors, where appropriate.

Gains or losses on these instruments can have a direct impact on our results of operations, unless we have effectively hedged our exposures. Increases in interest rates may result in further decreases in residential mortgage loan originations and could impact the origination of corporate debt. In addition, increases in interest rates or changes in spreads may continue to adversely impact the fair value of debt securities and, accordingly, for debt securities classified as available for sale, may continue to adversely affect accumulated other comprehensive income and, thus, capital levels. These market moves could also adversely impact our regulatory liquidity requirements. Any decreases in interest rates may increase prepayment speeds of certain assets, and, therefore, could adversely affect net interest income. Changes in interest rates also may impact the value of mortgage service rights retained.

Fair values may be impacted by declining values of the underlying assets or the prices at which observable market transactions occur and the continued availability of these transactions or indices. The financial strength of counterparties, with whom we have economically hedged some of our exposure to these assets, also will affect the fair value of these assets. Sudden declines and volatility in the prices of assets may curtail or eliminate trading activities in these assets, which may make it difficult to sell, hedge or value these assets. The inability to sell or effectively hedge assets reduces our ability to limit losses in such positions, and the difficulty in valuing assets may increase our risk-weighted assets (RWA), which requires us to maintain additional capital and increases our funding costs. Values of AUM also impact revenues in our wealth management and related advisory businesses for asset-based management and performance fees. Declines in values of AUM can result in lower fees earned for managing such assets.

Liquidity

If we are unable to access the capital markets, have prolonged net deposits outflows, or our borrowing costs increase, our liquidity and competitive position will be negatively affected.

Liquidity is essential to our businesses. We fund our assets primarily with globally sourced deposits in our bank entities, as well as secured and unsecured liabilities transacted in the capital markets. We rely on certain secured funding sources, such as repo markets, which are typically short-term and credit-sensitive. We also engage in asset securitization transactions, including with the government-sponsored enterprises (GSEs), to fund consumer lending activities. Our liquidity could be adversely affected by any inability to access the capital markets, illiquidity or volatility in the capital markets, the decrease in value of eligible collateral or increased collateral requirements (including as a result of credit concerns for short-term borrowing), changes to our relationships with our funding providers based on real or perceived changes in our risk profile, prolonged federal government shutdowns, or changes in regulations, guidance or GSE status that impact our funding. Additionally, our liquidity or cost of funds may be negatively impacted by the unwillingness or inability of the Federal Reserve to act as lender of last resort, unexpected simultaneous draws on lines of credit, slower customer payment rates, restricted access to the assets of prime brokerage clients, the withdrawal of or failure to attract customer deposits or invested funds (which could result from attrition driven by customers seeking higher yielding deposits or securities products, customer desire to utilize an alternative financial institution perceived to be safer, changes in customer spending behavior due to inflation, decline in the economy or other drivers resulting in an increased need for cash), increased regulatory liquidity, capital and margin requirements for our U.S. or international banks and their nonbank subsidiaries, which could result in the inability to transfer liquidity internally and inefficient funding, changes in patterns of intraday liquidity usage resulting from a counterparty or technology failure or other idiosyncratic event or failure or

default by a significant market participant or third party (including clearing agents, custodians, central banks or central counterparty clearinghouses (CCPs)). These factors also have the potential to increase our borrowing costs and negatively impact our liquidity.

Several of these factors may arise due to circumstances beyond our control, such as general market volatility, disruption, shock or stress, the emergence or continuation of widespread health emergencies or pandemics, Federal Reserve policy decisions (including fluctuations in interest rates or Federal Reserve balance sheet composition), negative views or loss of confidence about us or the financial services industry generally or due to a specific news event, changes in the regulatory environment or governmental fiscal or monetary policies, actions by credit rating agencies or an operational problem that affects third parties or us. The impact of these potentially sudden events, whether within our control or not, could include an inability to sell assets or redeem investments, unforeseen outflows of cash, the need to draw on liquidity facilities, the reduction of financing balances and the loss of equity secured funding, debt repurchases to support the secondary market or meet client requests, the need for additional funding for commitments and contingencies and unexpected collateral calls, among other things, the result of which could be increased costs, a liquidity shortfall and/or impact on our liquidity coverage ratio.

Our liquidity and cost of obtaining funding may be directly related to investor behavior, debt market disruption, firm specific concerns or prevailing market conditions, including changes in interest and currency exchange rates, significant fluctuations in equity and futures prices, lower trading volumes and prices of securitized products and our credit spreads. Increases in interest rates and our credit spreads can increase the cost of our funding and result in mark-to-market or credit valuation adjustment exposures. Changes in our credit spreads are market driven and may be influenced by market perceptions of our creditworthiness, including changes in our credit ratings or changes in broader financial market and macroeconomic conditions. Changes to interest rates and our credit spreads occur continuously and may be unpredictable and highly volatile. We may also experience net interest margin compression as a result of offering higher than expected deposit rates in order to attract and maintain deposits. Concentrations within our funding profile, such as maturities, currencies or counterparties, can reduce our funding efficiency.

Reduction in our credit ratings could limit our access to funding or the capital markets, increase borrowing costs or trigger additional collateral or funding requirements.

Our borrowing costs and ability to raise funds are directly impacted by our credit ratings. Credit ratings may also be important to investors, customers or counterparties when we compete in certain markets and seek to engage in certain transactions, including over-the-counter (OTC) derivatives. Our credit ratings are subject to ongoing review by rating agencies, which consider a number of financial and non-financial factors, including our franchise, financial strength, performance and prospects, management, governance, risk management practices, capital adequacy, asset quality and operations, among other criteria, as well as factors not under our control, such as regulatory developments, the macroeconomic and geopolitical environment and changes to the methodologies used to determine our ratings, or ratings generally.

Rating agencies could make adjustments to our credit ratings at any time and there can be no assurance as to whether or when any downgrades could occur. A reduction in our credit ratings could result in a wider credit spread and negatively affect our liquidity, access to credit markets, the related cost of funds, our businesses and certain trading revenues, particularly in those businesses where counterparty creditworthiness is critical. If the short-term credit ratings of our parent company, or bank or broker-dealer subsidiaries, were downgraded by one or more levels, we may experience loss of access to short-term funding sources such as repo financing, and/or incur increased cost of funds and increased collateral requirements. Under the terms of certain OTC derivative contracts and other trading agreements, if our or our subsidiaries' credit ratings are downgraded, the counterparties may require additional collateral or terminate these contracts or agreements.

While certain potential impacts are contractual and quantifiable, the full consequences of a credit rating downgrade are inherently uncertain and depend upon numerous dynamic, complex and inter-related factors and assumptions, including the relationship between long-term and short-term credit ratings and the behaviors of customers, investors and counterparties.

Bank of America Corporation is a holding company, is dependent on its subsidiaries for liquidity and may be restricted from transferring funds from subsidiaries.

Bank of America Corporation, as the parent company, is a separate and distinct legal entity from our bank and nonbank subsidiaries. We evaluate and manage liquidity on a legal entity basis. Legal entity liquidity is an important consideration as there are legal, regulatory, contractual and other limitations on our ability to utilize liquidity from one legal entity to satisfy the liquidity requirements of another, including the parent company, which could result in adverse liquidity events. The parent company depends on dividends, distributions, loans and other payments from our bank and nonbank subsidiaries to fund dividend payments on our preferred stock and common stock and to fund all payments on our other obligations, including debt obligations. Any inability of our subsidiaries to transfer funds, pay dividends or make payments to us may adversely affect our cash flow and financial condition.

Many of our subsidiaries, including our bank and broker-dealer subsidiaries, are subject to laws that restrict dividend payments, or authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to the parent company or other subsidiaries. Our bank and broker-dealer subsidiaries are subject to restrictions on their ability to lend or transact with affiliates, minimum regulatory capital and liquidity requirements and restrictions on their ability to use funds deposited with them in bank or brokerage accounts to fund their businesses. Intercompany arrangements we entered into in connection with our resolution planning submissions could restrict the amount of funding available to the parent company from our subsidiaries under certain adverse conditions.

Additional restrictions on related party transactions, increased capital and liquidity requirements and additional limitations on the use of funds on deposit in bank or brokerage accounts, as well as lower earnings, can reduce the amount of funds available to meet the obligations of the parent company and even require the parent company to provide additional funding to such subsidiaries. Also, regulatory action that requires additional liquidity at each of our subsidiaries could impede access to funds we need to pay our obligations or pay dividends. In addition, our right to participate in a distribution of assets upon a subsidiary's liquidation or reorganization is subject to prior claims of the subsidiary's creditors.

Bank of America Corporation's liquidity and financial condition, and the ability to pay dividends and obligations, could be adversely affected in the event of a resolution.

Bank of America Corporation, our parent holding company, is required to periodically submit a plan to the FDIC and Federal Reserve describing its resolution strategy under the U.S. Bankruptcy Code in the event of material financial distress or failure. Bank of America Corporation's preferred resolution strategy is a "single point of entry" strategy, whereby only the parent holding company would file for bankruptcy under the U.S. Bankruptcy Code. Certain key operating subsidiaries would be provided with sufficient capital and liquidity to operate through severe stress and to enable such subsidiaries to continue operating or be wound down in a solvent manner following a bankruptcy of the parent holding company. Bank of America Corporation has entered into intercompany arrangements resulting in the contribution of most of its capital and liquidity to key subsidiaries. Pursuant to these arrangements, if Bank of America Corporation's liquidity resources deteriorate so severely that resolution becomes imminent, it will no longer be able to draw liquidity from its key subsidiaries and will be required to contribute its remaining financial assets to a wholly-owned holding company subsidiary. This could adversely affect our liquidity and financial condition, including the ability to meet our payment obligations and the ability to return capital to shareholders, including through the payment of dividends and repurchase of the Corporation's common stock.

If the FDIC and Federal Reserve jointly determine that Bank of America Corporation's resolution plan is not credible, they could impose more stringent capital, leverage or liquidity requirements or restrictions on our growth, activities or operations. We could also be required to take certain actions that could impose operating costs and result in the divestiture of assets or restructuring of businesses and subsidiaries.

When a G-SIB such as Bank of America Corporation is in default or danger of default, the FDIC may be appointed receiver to conduct an orderly liquidation, and could, among other things, invoke the orderly liquidation authority, instead of the U.S. Bankruptcy Code, if the Secretary of the Treasury makes certain financial distress and systemic risk determinations. Additionally, the FDIC could replace Bank of America Corporation with a bridge holding company, which could continue operations and result in an orderly resolution of the underlying bank, but whose equity would be held solely for the benefit of our creditors. The FDIC's "single point of entry" strategy may result in our security holders suffering greater losses than would have been the case under a bankruptcy proceeding or a different resolution strategy.

If the Corporation is resolved under the U.S. Bankruptcy Code or the FDIC's orderly liquidation authority, third-party creditors of the Corporation's subsidiaries may receive significant or full recoveries on their claims while security holders of Bank of America Corporation could face significant or complete losses.

Credit

Economic or market disruptions and insufficient credit loss reserves may result in a higher provision for credit losses.

A number of our products expose us to credit risk, including loans, letters of credit, derivatives, debt securities, trading account assets and assets held-for-sale. Deterioration in the financial condition of our consumer and commercial borrowers, counterparties or underlying collateral could adversely affect our financial condition and results of operations.

Our credit portfolios may be impacted by U.S. and global macroeconomic and market conditions, events and disruptions, including declines in GDP, consumer spending or property values, asset price corrections, increasing consumer and corporate leverage, increases in corporate bond spreads, government shutdowns, tax changes, rising or elevated unemployment levels, inflation, fluctuations in foreign exchange or interest rates, as well as the emergence or continuation of widespread health emergencies or pandemics, extreme weather events and the impacts of climate change, including acute and/or chronic extreme weather events and efforts to transition to a low-carbon economy. Significant economic or market stresses and disruptions typically have a negative impact on the business environment and financial markets, which could impact the underlying credit quality of our borrowers, counterparties and assets. Property value declines or asset price corrections could increase the risk of borrowers or counterparties defaulting or becoming delinquent in their obligations to us, and could decrease the value of the collateral we hold, which could increase credit losses. Credit risk could also be magnified by lending to leveraged borrowers or declining asset prices, including property or collateral values, unrelated to macroeconomic stress. Simultaneous drawdowns on lines of credit and/or an increase in a borrower's leverage in a weakening economic environment, or otherwise, could result in deterioration in our credit portfolio, should borrowers be unable to fulfill competing financial obligations. Increased delinquency and default rates could adversely affect our credit portfolios, including consumer credit card, home equity and residential mortgage portfolios through increased charge-offs and provisions for credit losses.

A recessionary environment and/or a rise in unemployment could adversely impact the ability of our consumer and/or commercial borrowers or counterparties to meet their financial obligations and negatively impact our credit portfolio. Consumers have been and may continue to be negatively impacted by inflation, resulting in drawdowns of savings or increases in household debt. Higher interest rates, which have increased debt servicing costs for some businesses and households, may adversely impact credit quality, particularly in a recessionary environment. Certain sectors also remain at risk (e.g., commercial real estate office exposure, consumer discretionary industries) as a result of shifts in demand from the pandemic. Globally, conditions of slow growth or recession could further contribute to weaker credit conditions. If the macroeconomic environment worsens, our credit portfolio and allowance for credit losses could be adversely impacted.

We establish an allowance for credit losses, which includes the allowance for loan and lease losses and the reserve for unfunded lending commitments, based on management's best estimate of lifetime expected credit losses (ECL) inherent in our relevant financial assets. The process to determine the allowance for credit losses uses models and assumptions that require us to make difficult and complex judgments that are often interrelated, including forecasting how borrowers or counterparties may perform in changing economic conditions. The ability of our borrowers or counterparties to repay their obligations may be impacted by changes in future economic conditions, which in turn could impact the accuracy of our loss forecasts and allowance estimates. There is also the possibility that we have failed or will fail to accurately identify the appropriate economic indicators or accurately estimate their impacts to our borrowers or counterparties, which could impact the accuracy of our loss forecasts and allowance estimates.

If the models, estimates and assumptions we use to establish reserves or the judgments we make in extending credit to our borrowers or counterparties, which are more sensitive

due to the current uncertain macroeconomic and geopolitical environment, prove inaccurate in predicting future events, we may suffer losses in excess of our ECL. In addition, changes to external factors can negatively impact our recognition of credit losses in our portfolios and allowance for credit losses.

The allowance for credit losses is our best estimate of ECL; however, there is no guarantee that it will be sufficient to address credit losses, particularly if the economic outlook deteriorates significantly and quickly, or unexpectedly. As circumstances change, we may increase our allowance, which would reduce our earnings. If economic conditions worsen, impacting our consumer and commercial borrowers, counterparties or underlying collateral, and credit losses are worse than expected, we may increase our provision for credit losses, which could adversely affect our results of operations and financial condition.

Our concentrations of credit risk could adversely affect our credit losses, results of operations and financial condition.

We may be subject to concentrations of credit risk because of a common characteristic or common sensitivity to economic, financial, public health or business developments. Concentrations of credit risk may reside in a particular industry, geography, product, asset class, counterparty or within any pool of exposures with a common risk characteristic. A deterioration in the financial condition or prospects of a particular industry, geographic location, product or asset class, or a failure or downgrade of, or default by, any particular entity or group of entities could negatively affect our businesses, and it is possible our limits and credit monitoring exposure controls will not function as anticipated.

We execute a high volume of transactions and have significant credit concentrations with respect to the financial services industry, predominantly comprised of broker-dealers, commercial banks, investment banks, insurance companies, mutual funds, hedge funds, CCPs and other institutional clients. Financial services institutions and other counterparties are inter-related because of trading, funding, clearing or other relationships. Defaults by one or more counterparties, or market uncertainty about the financial stability of one or more financial services institutions, or the financial services industry generally, could lead to market-wide liquidity disruptions, losses, defaults and related disputes and litigation.

Our credit risk may also be heightened by market risk when the collateral held by us cannot be liquidated or is liquidated at prices not sufficient to recover the full amount of the loan or derivatives exposure due to us, which may occur as a result of events that impact the value of the collateral, such as an asset price correction or fraud. Disputes with obligors as to the valuation of collateral could increase in times of significant market stress, volatility or illiquidity, and we could suffer losses during such periods if we are unable to realize the fair value of the collateral or manage declines in the value of collateral.

We have concentrations of credit risk with respect to our consumer real estate and consumer credit card, and our commercial real estate and asset managers and funds portfolios, which represent a significant percentage of our overall credit portfolio. Declining home price valuations and demand where we have large concentrations could result in increased servicing advances and expenses, defaults, delinquencies or credit losses. The impacts of earthquakes, as well as climate change, such as rising average global temperatures and sea levels, and the increasing frequency and severity of extreme weather events and natural disasters, including droughts, floods, wildfires and hurricanes, could negatively impact collateral, the valuations of home or commercial real estate or our customers' ability and/or willingness to pay fees, outstanding loans or afford new products. This could also cause insurability risk and/or increased insurance costs to customers.

Economic weaknesses, sustained elevated inflation, adverse business conditions, market disruptions, adverse economic or market events, rising interest or capitalization rates, declining asset prices, greater volatility in areas where we have concentrated credit risk or deterioration in real estate values or household incomes may cause us to experience a decrease in cash flow and higher credit losses in our portfolios or cause us to write down the value of certain assets. We could also experience continued and long-term negative impacts to our commercial credit exposure and an increase in credit losses within those industries that may be permanently impacted by a change in consumer preferences resulting from COVID-19 (e.g., commercial real estate exposure) or other industry disruptions.

We also enter into transactions with sovereign nations, U.S. states and municipalities. Unfavorable economic or political conditions (such as those arising from the Russia/Ukraine conflict), disruptions to capital markets, currency fluctuations, changes in oil prices, social instability and changes in government or monetary policies could adversely impact the operating budgets or credit ratings of these government entities and expose us to credit and liquidity risk.

Liquidity disruptions in the financial markets may result in our inability to sell, syndicate or realize the value of our positions, increasing concentrations, which could increase RWA and the credit and market risk associated with our positions.

We may be adversely affected by weaknesses in the U.S. housing market.

U.S. home prices declined and housing demand slowed in the second half of 2022, including in certain markets where we have large concentrations of loans, driven in part by higher mortgage rates, including 30-year fixed-rate mortgages that more than doubled from 2021. This has negatively impacted the demand in some cases and underlying collateral for many of our products. Additionally, our mortgage loan production volume is generally influenced by the rate of growth in residential mortgage debt outstanding and the size of the residential mortgage market, both of which have slowed due to rising interest rates and reduced affordability. A deeper downturn in the condition of the U.S. housing market could result in both significant write-downs of asset values in several asset classes, notably mortgage-backed securities (MBS). If the U.S. housing market were to further weaken, the value of real estate could decline, which could result in increased credit losses and delinquent servicing expenses, negatively affect our representations and warranties exposures, and adversely affect our financial condition and results of operations.

Our derivatives businesses may expose us to unexpected risks and potential losses.

We are party to a large number of derivatives transactions that may expose us to unexpected market, credit and operational risks that could cause us to suffer unexpected losses. Severe declines in asset values or an unanticipated credit event, including unforeseen circumstances that may cause previously uncorrelated factors to become correlated and vice versa, may create losses resulting from risks not appropriately taken into account or anticipated in the development, structuring or pricing of a derivative instrument. Certain OTC derivative contracts and other trading agreements provide that upon the occurrence of certain specified events, such as a change to our or our affiliates' credit ratings, we may be required to provide additional collateral or take other

remedial actions, and we could experience increased difficulty obtaining funding or hedging risks. In some cases our counterparties may have the right to terminate or otherwise diminish our rights under these contracts or agreements.

We are also a member of various CCPs, which potentially increases our credit risk exposures to those CCPs. In the event that one or more members of a CCP default on their obligations, we may be required to pay a portion of any losses incurred by the CCP as a result of that default. A CCP may also, at its discretion, modify the margin we are required to post, which could mean unexpected and increased funding costs and exposure to that CCP. As a clearing member, we are exposed to the risk of non-performance by our clients for which we clear transactions, which may not be covered by available collateral. Additionally, default by a significant market participant may result in further risk and potential losses.

Geopolitical

We are subject to numerous political, economic, market, reputational, operational, compliance, legal, regulatory and other risks in the jurisdictions in which we operate.

We do business throughout the world, including in emerging markets. Economic or geopolitical stress in one or more countries could have a negative impact regionally or globally, resulting in, among other things, market volatility, reduced market value and economic output. Our liquidity and credit risk could be adversely impacted by, and our businesses and revenues derived from non-U.S. jurisdictions are subject to, risk of loss from financial, social or judicial instability, economic sanctions, changes in government leadership, including as a result of electoral outcomes or otherwise, changes in governmental policies or policies of central banks, expropriation, nationalization and/or confiscation of assets, price controls, high inflation, natural disasters, the emergence or continuation of widespread health emergencies or pandemics, capital controls, currency re-denomination risk from a country exiting the EU or otherwise, currency fluctuations, foreign exchange controls or movements (caused by devaluation or de-pegging), unfavorable political and diplomatic developments, oil price fluctuations and changes in legislation. These risks are especially elevated in emerging markets.

Continued tensions between the U.S. and important trading partners, particularly China, may result in sanctions, further tariff increases or other restrictive actions on cross-border trade, investment, and transfer of information technology that weigh on trade volumes, raise costs for producers, and adversely affect our businesses and revenues, as well as our customers and counterparties, including their credit quality.

Slowing growth, recessionary conditions, market volatility and/or political or civil unrest, global supply chain disruptions, labor shortages, wage pressures and elevated inflation in many countries pose additional challenges, including in the form of volatility in financial markets. Foreign exchange rates against the U.S. dollar remain an area of uncertainty and potential volatility as the Federal Reserve and other central banks raise interest rates, and depreciation could increase our financial risks with clients that deal in non-U.S. currencies but have U.S. dollar-denominated debt.

We invest or trade in the securities of corporations and governments located in non-U.S. jurisdictions, including emerging markets. Revenues from the trading of non-U.S. securities may be subject to negative fluctuations as a result of the above factors. Furthermore, the impact of these fluctuations could be magnified because non-U.S. trading markets, particularly in emerging markets, are generally smaller, less liquid and more volatile than U.S. trading markets. Risks in one nation can limit our opportunities for portfolio growth and negatively affect our operations in other nations, including our U.S. operations. Market and economic disruptions may affect consumer confidence levels and spending, corporate investment and job creation, bankruptcy rates, levels of incurrence and default on consumer and corporate debt, economic growth rates and asset values, among other factors.

Elevated government debt levels raise the risk of volatility, significant valuation changes, political tensions among EU members regarding fiscal policy or defaults on or devaluation of sovereign debt, which could expose us to substantial losses. Financial markets have been and may continue to be sensitive to government plans to lower taxes or increase spending.

Our non-U.S. businesses are also subject to extensive regulation by governments, securities exchanges and regulators, central banks and other regulatory bodies. In many countries, the laws and regulations applicable to the financial services and securities industries are less predictable, prone to change and uncertainty and evolving, and it may be difficult to determine the requirements of local laws in every market or manage our relationships with multiple regulators in various jurisdictions. Significant resources are spent on understanding and monitoring foreign laws, rules and regulations. Our inability to remain in compliance with local laws and manage our relationships with regulators could result in increased expenses, changes to our organizational structure and adversely affect our businesses, reputation and results of operations in that market.

We are also subject to complex and extensive U.S. and non-U.S. laws, rules and regulations, which subject us to costs and risks relating to bribery and corruption, anti-money laundering, embargo programs and economic sanctions, which can vary by jurisdiction and require implementation of complex operational capabilities and compliance programs. Non-compliance and/or violations could result in an increase in operational and compliance costs, and enforcement actions and civil and criminal penalties against us and individual employees. The increasing speed and novel ways in which funds circulate could make it more challenging to track the movement of funds and heighten financial crimes risk. Compliance with these evolving regulatory regimes and legal requirements depends on our ability to improve our processes, controls, surveillance, detection and reporting and analytic capabilities.

In connection with the U.K.'s exit from the EU, we are now subject to different laws and regulations, which are expected to diverge further over time, and are subject to the oversight of additional regulatory authorities. As political and regulatory environments evolve, further changes to the legal and regulatory framework under which our subsidiaries provide products and services in the U.K. and in the EU may result in additional compliance costs and have negative tax consequences or an adverse impact on our results of operations.

In the U.S., the government's debt ceiling and budget deficit concerns have increased the possibility of U.S. government defaults on its debt and/or downgrades to its credit ratings, and prolonged government shutdowns, which could weaken the U.S. dollar, cause market volatility, negatively impact the global economy and banking system and adversely affect our financial condition, including our liquidity. Additionally, changes in fiscal, monetary or regulatory policy, including as a result of labor shortages, wage pressures, supply chain disruptions and higher inflation, could increase our compliance costs and adversely affect our business operations, organizational structure and results of operations. Monetary policy has contributed to a significant depreciation of many foreign currencies over the past

year. Emerging markets are particularly vulnerable to tighter U.S. monetary policy, and many have responded by tightening monetary policy and intervening in foreign exchange markets. Further monetary tightening by the Federal Reserve risks creating additional currency volatility and recessionary conditions in a number of non-U.S. markets.

We are also subject to geopolitical risks, including economic sanctions, acts or threats of international or domestic terrorism, including responses by the U.S. or other governments thereto, increased risk of state-sponsored cyberattacks or campaigns, civil unrest and/or military conflicts, including the escalation of tensions between China and Taiwan, which could adversely affect business, market trade and general economic conditions abroad and in the U.S. The Russia/Ukraine conflict has magnified such risks and resulted in regional instability and adversely impacted commodity and other financial markets, as well as economic conditions, especially in Europe where there is significant risk of recession in some countries. The disruption of energy supplies and other goods and sanctions have contributed to inflationary pressures in Europe and other regions, which has resulted in greater monetary tightening by policymakers, and could adversely impact the profitability of businesses and our credit risk. Military escalation resulting in the involvement of neighboring countries and/or North Atlantic Treaty Organization member countries or new sanctions could result in additional economic disruptions, financial market volatility, and changes to asset valuations, which could disrupt our operations and adversely affect our results of operations.

Business Operations

A failure in or breach of our operational or security systems or infrastructure, or those of third parties or the financial services industry, could cause disruptions, adversely impact our results of operations and financial condition, and cause legal or reputational harm.

Operational risk exposure exists throughout our organization and as a result of our interactions with, and reliance on, third parties and the financial services industry infrastructure. Our operational and security systems infrastructure, including our computer systems, emerging technologies, data management and internal processes and controls, as well as those of third parties, are integral to our performance.

Our financial, accounting, data processing and transmission, storage, backup and other operating or security systems and infrastructure, or those of third parties, may be ineffective or fail to operate properly or become disabled or damaged as a result of a number of factors, including events that are wholly or partially beyond our or such third party's control, which could adversely affect our ability to process transactions or provide services. Prolonged disruptions to our critical business operations and customer services are possible due to computer, telecommunications, network, utility, electronic or physical infrastructure outages, including from abuse or failure of our electronic trading and algorithmic platforms, significant unplanned increases in customer transactions, newly identified vulnerabilities in key hardware and software, failure of aging infrastructure or manual processes, retired or redundant software and/or hardware, technology project implementation challenges and supply chain disruptions. Operational disruptions and prolonged operational outages could also result from events arising from natural disasters, including acute and chronic weather events, such as wildfires, tornadoes, hurricanes and floods, some of which are happening with more frequency and severity, and earthquakes, as well as local or larger scale political or social matters, including civil unrest, terrorist acts and military conflict.

We continue to have greater reliance on remote access tools and technology and employees' personal systems (and our third parties' employees' personal systems) and increased data utilization and are increasingly dependent upon our information technology infrastructure to operate our businesses remotely due to the increased number of employees who work from home and evolving customer preferences, including increased reliance on digital banking and other digital services provided by our businesses. Effective management of our business continuity increasingly depends on the security, reliability and adequacy of such systems.

We also rely on our employees, representatives and third parties in our day-to-day operations, who may, due to illness, unavailability, human error, misconduct (including errors in judgment, malice, fraudulent or illegal activity), malfeasance or a failure or breach of systems or infrastructure cause disruptions to our organization and expose us to operational losses, regulatory risk and reputational harm. Our and our third parties' inability to properly introduce, deploy and manage changes to internal financial and governance processes, existing products, services and technology, and new product innovations and technology could also result in additional operational and regulatory risk.

Regardless of the measures we have taken to implement training, procedures, backup systems and other safeguards to support our operations and bolster our operational resilience, our ability to conduct business may be adversely affected by significant disruptions to us or to third parties with whom we interact or upon whom we rely, including systemic cyber events that result in system outages and unavailability of part or all of the internet, cloud services and/or the financial services industry infrastructure (including electronic trading platforms and critical banking activities). Our ability to implement backup systems and other safeguards with respect to third-party systems and the financial services industry infrastructure is more limited than with our own systems.

Any backup systems may not process data as quickly as our primary systems and some data might not have been backed up. We regularly update the systems we rely on to support our operations and growth and to remain compliant with all applicable laws, rules and regulations globally. This updating entails significant costs and creates risks associated with implementing new systems and integrating them with existing ones, including business interruptions.

A failure or breach of our operational or security systems or infrastructure resulting in disruption to our critical business operations and customer services and/or failure to identify, effectively respond to operational risks in a timely manner, and continue to deliver our services through an operational disruption could expose us to a number of risks, including market abuse, regulatory, market, privacy and liquidity risk, and adversely impact our results of operations and financial condition, and cause legal or reputational harm.

A cyberattack, information or security breach, or a technology failure of ours or of a third party could adversely affect our ability to conduct our business, result in the misuse or disclosure of information, result in additional costs, damage to our reputation, increase our regulatory and legal risks and cause financial losses.

Our business is highly dependent on the security, controls and efficacy of our infrastructure, computer and data management systems, and those of our customers, suppliers, counterparties and other third parties, the financial services

industry and financial data aggregators, with whom we interact, on whom we rely or who have access to our customers' personal or account information. We rely on effective access management and the secure collection, processing, transmission, storage and retrieval of confidential, proprietary, personally identifiable and other information in our and our third parties' computer and data management systems and networks.

Our cybersecurity risk and exposure remains heightened because of, among other things, our prominent size and scale, high-profile brand, geographic footprint and international presence and role in the financial services industry and the broader economy. The proliferation of third-party financial data aggregators and emerging technologies, including our use of automation, artificial intelligence (AI) and robotics, increase our cybersecurity risks and exposure.

We, our employees, customers, regulators and third parties are regularly the target of an increasing number of cyber threats and attacks. Cyber threats and techniques used in cyberattacks are pervasive, sophisticated and difficult to prevent, including computer viruses, malicious or destructive code (such as ransomware), social engineering (including phishing, vishing and smishing), denial of service or information or other security breach tactics that could result in disruptions to our businesses and operations, the loss of our funds and/or our clients' and the unauthorized disclosure, release, gathering, monitoring, misuse, loss or destruction or theft of confidential, proprietary and other information, including intellectual property, of ours, our employees, our customers or of third parties. Cyberattacks may be carried out on a worldwide scale and by a growing number of cyber actors, including organized crime groups, hackers, terrorist organizations, extremist parties, hostile foreign governments, state-sponsored actors, activists, disgruntled employees and other third parties, including those involved in corporate espionage.

Cyber threats and the techniques used in cyberattacks change, develop and evolve rapidly, including from emerging technologies, such as advanced forms of AI and quantum computing. Despite substantial efforts to protect the integrity and resilience of our systems and implement controls, processes, policies, employee training and other protective measures, we may not be able to anticipate or detect cyberattacks or information or security breaches and/or develop or implement effective preventive or defensive measures to address or mitigate such attacks or breaches. Internal access management failures could result in the compromise or unauthorized exposure of confidential data. Additionally, the failure of our employees to exercise sound judgment and vigilance when targeted with social engineering cyberattacks may increase our vulnerability.

Our risk and exposure to cyberattacks and security breaches continue to increase due to the acceptance and use of digital banking products and services, including mobile banking products, and reliance on remote access tools and technology, which have increased our reliance on virtual/digital interactions and a larger number of access points to our networks that must be secured. This increased risk of unauthorized access to our networks results in greater amounts of information being available for access. Employees working remotely away from the office (whether on personal or our devices) also represent inherently greater risk than employees working in our offices. Greater demand on our information technology infrastructure and security tools and processes will likely continue.

We also face indirect technology, cybersecurity and operational risks relating to the customers, clients and other third parties with whom we do business and the financial services industry, upon whom we rely to facilitate or enable our business activities or upon whom our customers rely. Other indirect risks relate to providers of products and/or services, financial counterparties, financial data aggregators, financial intermediaries, such as clearing agents, exchanges and clearing houses, regulators, providers of critical infrastructure, such as internet access and electrical power, and retailers for whom we process transactions. We are also at additional risk resulting from critical third-party information security and open-source software vulnerabilities.

We have exposure to cyber threats due to our continuous transmission of sensitive information to, and storage of such information by, third parties, including providers of products and/or services, and regulators, the outsourcing of some of our business operations, and system and customer account updates and conversions. Further, any such event may not be disclosed to us in a timely manner. Any failure, cyberattack or other information or security breach that significantly degrades, deletes or compromises our systems or data could adversely impact third parties, counterparties and the critical infrastructure of the financial services industry.

Due to increasing consolidation, interdependence and complexity of financial entities and technology systems, a technology failure, cyberattack or other information or security vulnerability, failure or breach that significantly exposes, degrades, deletes or compromises the systems or data of one or more financial entities or third parties could adversely impact us and increase the risk of operational failure, as disparate systems need to be integrated, often on an accelerated basis.

Cyberattacks or security breaches could persist for an extended period of time before being detected and take additional time to determine the scope, extent, amount, and type of information compromised, following which the impact and measures to recover and restore to a business-as-usual state may be difficult to assess. We continue to expend significant additional money and resources to modify or enhance our protective measures, investigate and remediate any information security, software or network vulnerabilities or incidents whether specific to us, a third party, the industry or businesses in general, and develop our capabilities to respond and recover.

While we have experienced cyberattacks and security breaches, and expect to continue to, we have not experienced any material losses or other material consequences relating to technology failure, cyberattacks or other information or security breaches, whether directed at us or third parties. There can be no assurance that our controls and procedures in place to monitor and mitigate the risks of cyber threats, including the remediation of critical information security and software vulnerabilities, will be sufficient and/or timely and that we will not suffer material losses or consequences in the future. Successful penetration or circumvention of system security could result in negative consequences, including loss of customers and business opportunities, the withdrawal of customer deposits, misappropriation or destruction of our intellectual property, proprietary information or confidential information and/or the confidential, proprietary or personally identifiable information of certain parties, such as our employees, customers, providers of products and services, counterparties and other third parties, or damage to their computers or systems. Any future technology failure, cyberattack or breach could adversely affect our ability to conduct day-to-day business activities, effect transactions, service our clients, manage our exposure to risk or expand our

businesses, result in fraudulent or unauthorized transactions or cause prolonged computer and network outages resulting in material disruptions to our or our customers' or other third parties' network access or critical business operations and customer services, in the U.S. and/or globally.

Any cyberattack or breach, whether directed at us or third parties, may result in significant lost revenue, give rise to losses and claims brought by third parties, litigation exposure, regulatory sanctions, enforcement actions, government fines, penalties or intervention and other negative consequences. The actual or perceived success of a cyberattack on our systems may damage our reputation with customers and third parties with whom we do business and/or result in the loss of confidence in our security measures. Additionally, our failure to disclose or communicate cyber incidents appropriately to relevant parties could result in regulatory, privacy, operational and reputational risk. Although we maintain cyber insurance, there can be no assurance that liabilities or losses we may incur will be covered under such policies or that the amount of insurance will be adequate. Cyberattacks or other information or security breaches could also result in a violation of applicable privacy and other laws, reimbursement or other compensatory costs, additional compliance costs, and our internal controls or disclosure controls being rendered ineffective. The occurrence of any of these events could adversely impact our businesses, results of operations, liquidity and financial condition.

Failure to satisfy our obligations as servicer for residential mortgage securitizations, loans owned by other entities and other related losses could adversely impact our reputation, servicing costs or results of operations.

We and our legacy companies service mortgage loans on behalf of third-party securitization vehicles and other investors. If we commit a material breach of our obligations as servicer or master servicer, we may be subject to termination if the breach is not cured within a specified period of time following notice, which could cause us to lose servicing income. We may also have liability for any failure by us, as a servicer or master servicer, for any act or omission on our part that involves willful misfeasance, bad faith, gross negligence or reckless disregard of our duties. If any such breach was found to have occurred, it may harm our reputation, increase our servicing costs or losses due to potential indemnification obligations, result in litigation or regulatory action or adversely impact our results of operations. Additionally, foreclosures may result in costs, litigation or losses due to irregularities in the underlying documentation, or if the validity of a foreclosure action is challenged by a borrower or overturned by a court because of errors or deficiencies in the foreclosure process. We may also incur costs or losses relating to delays or alleged deficiencies in processing documents necessary to comply with state law governing foreclosure.

Changes in the structure of and relationship among the GSEs could adversely impact our business.

We rely on the GSEs to guarantee or purchase mortgage loans that meet their conforming loan requirements. During 2022, we sold approximately $4.1 billion of loans to GSEs, primarily Freddie Mac (FHLMC). FHLMC and Fannie Mae (FNMA) are currently in conservatorship, with the Federal Housing Finance Agency (FHFA) acting as conservator. In 2019, the Treasury Department published a proposal to recapitalize FHLMC and FNMA and remove them from conservatorship and reduce their role in the marketplace. In January 2021, the Treasury Department further amended the agreement that governs the conservatorship of FHLMC and FNMA and delineated the continued objective to remove the GSEs from conservatorship. However, we cannot predict the future prospects of the GSEs, timing of the recapitalization or release from conservatorship, or content of legislative or rulemaking proposals regarding the future status of the GSEs in the housing market. If the GSEs take a reduced role in the marketplace, including by limiting the mortgage products they offer, we could be required to seek alternative funding sources, retain additional loans on our balance sheet, secure funding through the Federal Home Loan Bank system, or securitize the loans through Private Label Securitization, which could increase our cost of funds related to the origination of new mortgage loans, increase credit risk and/or impact our capacity to originate new mortgage loans. Uncertainty regarding their future and the MBS they guarantee continues to exist for the foreseeable future. These developments could adversely affect our securities portfolios, capital levels, liquidity and results of operations.

Our risk management framework may not be effective in mitigating risk and reducing the potential for losses.

Our risk management framework is designed to minimize risk and loss to us. We seek to effectively and consistently identify, measure, monitor, report and control the key types of risk to which we are subject, including strategic, credit, market, liquidity, compliance, operational and reputational risks. Additionally, risks may span across multiple key risk types, including climate risk and legal risk. While we employ a broad and diversified set of controls and risk mitigation techniques, including modeling and forecasting, hedging strategies and techniques that seek to balance our ability to profit from trading positions with our exposure to potential losses, our ability to control and mitigate risks that result in losses is inherently limited by our ability to identify and measure all risks, including emerging and unknown risks, anticipate the timing and impact of risks, apply effective hedging strategies, make correct assumptions, manage and aggregate data correctly and efficiently, identify changes in markets or client behaviors not yet inherent in historical data and develop risk management models and forecasts to assess and control risk.

Our ability to manage risk is dependent on our ability to consistently execute all elements of our risk management program and develop and maintain a culture of managing risk well throughout the Corporation and manage risks associated with third parties, including providers of products and/or services, enable effective risk management and help confirm that risks are appropriately considered, evaluated and responded to in a timely manner. Uncertain economic and geopolitical conditions, heightened legislative and regulatory scrutiny of and change within the financial services industry, the pace of technological changes, accounting and market developments, the failure of employees, representatives and third parties to comply with our policies and Risk Framework and the overall complexity of our operations, among other developments, have in the past and may in the future result in a heightened level of risk. For example, we have experienced increased operational, reputational and compliance risk as a result of the prior need to rapidly deploy and implement multiple and varying pandemic relief programs, including the processing of unemployment benefits for California and certain other states, which have resulted in and will continue to result in losses. Our failure to manage evolving risks or properly anticipate, manage, control or mitigate risks could result in additional losses.

Regulatory, Compliance and Legal

We are subject to evolving government legislation and regulations and certain settlements, orders and agreements with government authorities from time to time.

We are subject to evolving and comprehensive regulation under federal and state laws in the U.S. and the laws of the various jurisdictions in which we operate, including increasing and complex regulatory sanctions regimes. These laws and regulations significantly affect and have the potential to restrict the scope of our existing businesses, limit our ability to pursue certain business opportunities, including the products and services we offer, reduce certain fees and rates or make our products and services more expensive for our clients. We are also required to file various financial and non-financial regulatory reports to comply with laws, rules and regulations in the jurisdictions in which we operate.

We continue to adjust our business and operations, legal entity structure, disclosure and policies, processes, procedures and controls, including with regard to capital and liquidity management, risk management and data management, to comply with laws, rules and regulations, as well as guidance and interpretation by regulatory authorities, including the Department of Treasury (including the Internal Revenue Service (IRS)), Federal Reserve, OCC, CFPB, Financial Stability Oversight Council, FDIC, Department of Labor, SEC and CFTC in the U.S., foreign regulators, other government authorities and self-regulatory organizations. Further, we could become subject to future laws, rules and regulations beyond those currently proposed, adopted or contemplated in the U.S. or abroad, including policies and rulemaking related to emerging technologies, cybersecurity and data, and climate risk management and ESG governance and reporting, including emissions and sustainability disclosure. The cumulative effect of all of the current and possible future legislation and regulations on our litigation and regulatory exposure, businesses, operations and profitability remains uncertain and necessitates that we make certain assumptions with respect to the scope and requirements of prospective and proposed laws, rules and regulations in our business planning. If these assumptions prove incorrect, we could be subject to increased regulatory, legal and compliance risks and costs as well as potential reputational harm. Also, U.S. and regulatory initiatives abroad may overlap, and non-U.S. regulation and initiatives may be inconsistent or may conflict with current or proposed U.S. regulations, which could lead to compliance risks and increased costs.

Our regulators' prudential and supervisory authority gives them broad power and discretion to direct our actions, and they have assumed an active oversight, inspection and investigatory role across the financial services industry. Regulatory focus is not limited to laws, rules and regulations applicable to the financial services industry, but includes other significant laws, rules and regulations that apply across industries and jurisdictions, including those related to anti-money laundering, anti-bribery, anti-corruption and regulatory sanctions.

We are also subject to laws, rules and regulations in the U.S. and abroad, including the GDPR and CCPA as modified by the CPRA, and a number of additional jurisdictions enacting or considering similar laws, regarding privacy and the disclosure, collection, use, sharing and safeguarding of personally identifiable information, including our employees, customers, suppliers, counterparties and other third parties, the violation of which could result in litigation, regulatory fines, enforcement actions and operational loss. The complexity and risk of compliance has been magnified by the collection of employee health and/or other information in response to the pandemic. Additionally, we will likely be subject to new and evolving data privacy laws in the U.S. and abroad, which could result in additional costs of compliance, litigation, regulatory fines and enforcement actions. There remains complexity and uncertainty, including potential suspension or prohibition, regarding data transfer because of concerns over compliance with laws, rules and regulations for cross-border flows and transfers of personal data from the European Economic Area (EEA) to the U.S. and other jurisdictions outside of the EEA, resulting from judicial and regulatory guidance. To the extent that a new EU-U.S. Data Privacy Framework leads to a relaxation of applicable legislation and regulations, regardless of transfer mechanism, challenges are expected from consumer advocacy groups. Other jurisdictions, including China, Russia and India, have commenced consultation efforts or enacted new legislation or regulations to establish standards for personal data transfers. If cross-border personal data transfers are suspended or restricted or we are required to implement distinct processes for each jurisdiction's standards, this could result in operational disruptions to our businesses, additional costs, increased enforcement activity, new contract negotiations with third parties, and/or modification of such data management.

As part of their enforcement authority, our regulators and other government authorities have the authority to, among other things, conduct investigations and assess significant civil or criminal monetary fines, penalties or restitution, issue cease and desist orders, initiate injunctive action, apply regulatory sanctions or enter into consent orders. The amounts paid by us and other financial institutions to settle proceedings or investigations have, in some instances, been substantial and may increase. In some cases, governmental authorities have required criminal pleas or other extraordinary terms as part of such resolutions, which could have significant consequences, including reputational harm, loss of customers, restrictions on the ability to access capital markets, and the inability to operate certain businesses or offer certain products. Our response to regulators and other government authorities may be time-consuming, be expensive and divert management attention from our business. The outcome of any matter, which may last years, may be difficult to predict or estimate.

Additionally, the terms of settlements, orders and agreements that we have entered into with government entities and regulatory authorities have imposed, or could impose, significant operational and compliance costs on us with respect to enhancements to our procedures and controls, losses with respect to fraudulent transactions perpetrated against our customers, expansion of our risk and control functions within our lines of business, investment in technology and the hiring of significant numbers of additional risk, control and compliance personnel. If we fail to meet the requirements of the regulatory settlements, orders or agreements to which we are subject, or, more generally, fail to maintain risk and control procedures and processes that meet the heightened standards established by our regulators and other government authorities, we could be required to enter into further settlements, orders or agreements and pay additional fines, penalties or judgments, or accept material regulatory restrictions on our businesses.

Improper actions, behaviors or practices by us, our employees or representatives that are illegal, unethical or contrary to our core values could harm us, our shareholders or customers or damage the integrity of the financial markets, and are subject to regulatory scrutiny across jurisdictions. The complexity of the regulatory and enforcement regimes in the

U.S., coupled with the global scope of our operations and the regulatory environment worldwide, also means that a single event or practice or a series of related events or practices may give rise to a significant number of overlapping investigations and regulatory proceedings, either by multiple federal and state agencies in the U.S. or by multiple regulators and other governmental entities in different jurisdictions. Actions by other members of the financial services industry related to business activities in which we participate may result in investigations by regulators or other government authorities.

While we believe that we have adopted appropriate risk management and compliance programs, compliance risks will continue to exist, particularly as we anticipate and adapt to new and evolving laws, rules and regulations. We also rely upon third parties who may expose us to compliance and legal risk. Future legislative or regulatory actions, and any required changes to our business or operations, or those of third parties upon whom we rely, resulting from such developments and actions could result in a significant loss of revenue, impose additional compliance and other costs or otherwise reduce our profitability, limit the products and services that we offer or our ability to pursue certain business opportunities, require us to dispose of certain businesses or assets, require us to curtail certain businesses, affect the value of assets that we hold, require us to increase our prices and therefore reduce demand for our products, or otherwise adversely affect our businesses.

We are subject to risks from potential liability arising from lawsuits and regulatory and government action.

We face significant legal risks in our business, with a high volume of claims against us and other financial institutions. The amount of damages, penalties and fines that litigants and regulators seek from us and other financial institutions continues to be significant. This includes disputes with consumers, customers and other counterparties.

Financial institutions, including us, continue to be the subject of claims alleging anti-competitive conduct with respect to various products and markets, including U.S. antitrust class actions claiming joint and several liability for treble damages. As disclosed in *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements, we also face contractual indemnification and loan-repurchase claims arising from alleged breaches of representations and warranties in the sale of residential mortgages by legacy companies, which may result in a requirement that we repurchase the mortgage loans, or make whole or provide other remedies to counterparties.

U.S. regulators and government agencies regularly pursue enforcement claims against financial institutions including the Corporation for alleged violations of law and customer harm under the Financial Institutions Reform, Recovery, and Enforcement Act, the federal securities laws, the False Claims Act, fair lending laws and regulations (including the Equal Credit Opportunity Act and the Fair Housing Act), antitrust laws, and consumer protection laws and regulations related to products and services such as overdraft and sales practices, including prohibitions on unfair, deceptive, and/or abusive acts and practices under the Consumer Financial Protection Act and the Federal Trade Commission Act. Such claims may carry significant penalties, restitution and, in certain cases, treble damages, and the ultimate resolution of regulatory inquiries, investigations and other proceedings to which we are subject from time-to-time is difficult to predict.

There is also an increased focus on compliance with U.S. and global laws, rules and regulations related to the collection, use, sharing and safeguarding of personally identifiable information and corporate data, as well as the implementation, use and management of emerging technologies, including AI and machine learning. Additionally, misconduct by our employees and representatives, including unethical, fraudulent, improper or illegal conduct, unfair, deceptive, abusive or discriminatory business practices, or violations of policies, procedures, laws, rules or regulations, including conduct that affects compliance with books and records requirements, can result in litigation and/or government investigations and enforcement actions, and cause significant reputational harm. We are also subject to litigation and regulatory and government actions regarding fraud perpetrated against our customers in connection with the use of our products and services and increased scrutiny of sustainability-related policies, goals, targets and disclosure, which could result in litigation, regulatory investigations and actions and reputational harm.

The global environment of extensive investigations, regulation, regulatory compliance burdens, litigation and regulatory enforcement, combined with uncertainty related to the continually evolving regulatory environment, have affected and will likely continue to affect operational and compliance costs and risks, including the limitation or cessation of our ability or feasibility to continue providing certain products and services. Lawsuits and regulatory actions have resulted in and will likely continue to result in judgments, orders, settlements, penalties and fines adverse to us. Further, we entered into orders with government authorities regarding our participation in implementing government relief measures related to the pandemic and other federal and state government assistance programs, including the processing of unemployment benefits for California and certain other states, and continue to be involved in related litigation which may result in judgments and/or settlements. Litigation and investigation costs, substantial legal liability or significant regulatory or government action against us could have material adverse effects on our business, financial condition, including liquidity, and results of operations, and/or cause significant reputational harm.

U.S. federal banking agencies may require us to increase our regulatory capital, total loss-absorbing capacity (TLAC), long-term debt or liquidity requirements.

We are subject to U.S. regulatory capital and liquidity rules. These rules, among other things, establish minimum requirements to qualify as a well-capitalized institution. If any of our subsidiary insured depository institutions fail to maintain their status as well capitalized under the applicable regulatory capital rules, the Federal Reserve will require us to agree to bring the insured depository institution back to well-capitalized status. For the duration of such an agreement, the Federal Reserve may impose restrictions on our activities. If we were to fail to enter into or comply with such an agreement, the Federal Reserve may impose more severe restrictions on our activities, including requiring us to cease and desist activities permitted under the Bank Holding Company Act of 1956.

Capital and liquidity requirements are frequently introduced and amended. It is possible that regulators may increase regulatory capital requirements including TLAC and long-term debt requirements, change how regulatory capital or RWA is calculated or increase liquidity requirements. Our ability to return capital to our shareholders depends in part on our ability to maintain regulatory capital levels above minimum requirements plus buffers. To the extent that increases occur in our SCB, G-SIB surcharge or countercyclical capital buffer, our returns of capital to shareholders, including common stock dividends and common stock repurchases, could decrease. For example, our G-SIB surcharge is expected to increase by 50 bps to 3.0 percent on January 1, 2024. The Federal Reserve could

also limit or prohibit capital actions, such as paying or increasing dividends or repurchasing common stock, as a result of economic disruptions or events.

As part of its CCAR, the Federal Reserve conducts stress testing on parts of our business using hypothetical economic scenarios prepared by the Federal Reserve. Those scenarios may affect our CCAR stress test results, which may impact the level of our SCB, requiring us to hold additional capital. For example, based on CCAR 2022 stress test results, our SCB increased 90 bps to 3.4 percent on October 1, 2022.

A significant component of regulatory capital ratios is calculating our RWA and our leverage exposure, which may increase. The Basel Committee on Banking Supervision has also revised several key methodologies for measuring RWA that have not yet been implemented in the U.S., including a standardized approach for operational risk, revised market risk requirements and constraints on the use of internal models, as well as a capital floor based on the revised standardized approaches. It is expected in 2023 that U.S. banking regulators will propose updates to the U.S. capital framework to incorporate the Basel Committee revisions. Economic disruptions or events may also cause an increase in our balance sheet, RWA or leverage exposures, increasing required regulatory capital and liquidity amounts.

Changes to and compliance with the regulatory capital and liquidity requirements may impact our operations by requiring us to liquidate assets, increase borrowings, issue additional equity or other securities, reduce the amount of common stock repurchases or dividends, cease or alter certain operations and business activities or hold highly liquid assets, which may adversely affect our results of operations.

Changes in accounting standards or assumptions in applying accounting policies could adversely affect us.

Accounting policies and methods are fundamental to how we record and report our financial condition and results of operations. Some of these policies require use of estimates and assumptions that may affect the reported value of our assets or liabilities and results of operations and are critical because they require management to make difficult, subjective and complex judgments about matters that are inherently uncertain. If assumptions, estimates or judgments were erroneously applied, we could be required to correct and restate prior-period financial statements. Accounting standard-setters and those who interpret the accounting standards, including the SEC, banking regulators and our independent registered public accounting firm may also amend or even reverse their previous interpretations or positions on how various standards should be applied. These changes may be difficult to predict and could impact the preparation and reporting of our financial statements, including the application of new or revised standards retrospectively, resulting in revisions to prior-period financial statements.

We may be adversely affected by changes in U.S. and non-U.S. tax laws and regulations.

It is possible that governmental authorities in the U.S. and/or other countries could further change tax laws in a way that would materially adversely affect us, including changes to the Tax Cuts and Jobs Act of 2017 and Inflation Reduction Act of 2022. New guidelines issued by the Organization for Economic Cooperation and Development could adversely impact how the global profits of multinational enterprises are taxed. Any change in tax laws and regulations or interpretations of current or future tax laws and regulations could materially adversely affect our effective tax rate, tax liabilities and results of operations. U.S. and foreign tax laws are complex and our judgments, interpretations or applications of such tax laws could differ from that of the relevant governmental authority. This could result in additional tax liabilities and interest, penalties, the reduction of certain tax benefits and/or the requirement to make adjustments to amounts recorded, which could be material.

Additionally, we have U.K. net deferred tax assets (DTA) which consist primarily of net operating losses that are expected to be realized by certain subsidiaries over an extended number of years. Adverse developments with respect to tax laws or to other material factors, such as prolonged worsening of Europe's capital markets or changes in the ability of our U.K. subsidiaries to conduct business in the EU, could lead our management to reassess and/or change its current conclusion that no valuation allowance is necessary with respect to our U.K. net DTA.

Reputation

Damage to our reputation could harm our businesses, including our competitive position and business prospects.

Our ability to attract and retain customers, clients, investors and employees is impacted by our reputation. Harm to our reputation can arise from various sources, including actual or perceived activities of our officers, directors, employees, contractors, third parties, clients, counterparties and other representatives, such as fraud, misconduct and unethical behavior (such as employees' sales practices), adequacy of our responsiveness to fraud claims perpetrated against our customers, effectiveness of our internal controls, litigation or regulatory matters and their outcomes, compensation practices, lending practices, suitability or reasonableness of particular trading or investment strategies, including the reliability of our research and models, and prohibiting clients from engaging in certain transactions.

Our reputation may also be harmed by actual or perceived failure to deliver the products and standards of service and quality expected by our customers, clients and the community, including the overstatement or mislabeling of the environmental benefits of our products, services or transactions, failure to recognize and address customer complaints, compliance failures, inability to implement or manage emerging technologies, including quantum computing, AI, machine learning and technology change, failure to maintain effective data management, security breaches, cyber incidents, prolonged or repeated system outages, unintended disclosure of personal, proprietary or confidential information, breach of fiduciary obligations and handling of the emergence or continuation of health emergencies or pandemics. For example, we entered into orders with certain government agencies regarding our processing of unemployment benefits for California and certain other states, and continue to be involved in related litigation, which may result in judgments and/or settlements. Our reputation may also be negatively impacted by our ESG practices and disclosures, and those of our customers and third parties.

Actions by the financial services industry generally or by certain members or individuals in the industry also can adversely affect our reputation. Also, adverse publicity or negative information posted on social media by employees, the media or otherwise, whether or not factually correct, may adversely impact our business prospects or financial results.

We are subject to complex and evolving laws and regulations regarding fair lending activity, UDAAP, electronic funds transfers, know-your-customer requirements, data protection and privacy, including the GDPR, CCPA as modified by the CPRA, cross-border data movement, cybersecurity and other matters, as well as evolving and expansive interpretations of these laws and

regulations. Principles concerning the appropriate scope of consumer and commercial privacy vary considerably in different jurisdictions, and regulatory and public expectations regarding the definition and scope of consumer and commercial privacy may remain fluid. These laws may be interpreted and applied by various jurisdictions in a manner inconsistent with our current or future practices, or with one another. If personal, confidential or proprietary information of customers in our possession, or in the possession of third parties or financial data aggregators, is mishandled, misused or mismanaged, or if we do not timely or adequately address such information, we may face regulatory, legal and operational risks, which could adversely affect our reputation, financial condition and results of operations.

We could suffer reputational harm if we fail to properly identify and manage potential conflicts of interest. Management of potential conflicts of interest has become increasingly complex as we expand our business activities through more numerous transactions, obligations and interests with and among our clients. The actual or perceived failure to adequately address conflicts of interest could affect the willingness of clients to use our products and services, or result in litigation or enforcement actions, which could adversely affect our business.

Our actual or perceived failure to address these and other issues, such as operational risks, gives rise to reputational risk that could harm us and our business prospects. Failure to appropriately address any of these issues could also give rise to additional regulatory restrictions, legal risks and reputational harm, which could, among other consequences, increase the size and number of litigation claims and damages asserted or subject us to enforcement actions, fines and penalties, and cause us to incur related costs and expenses.

Other

The impacts of the pandemic have adversely affected and may in the future adversely affect us.

The COVID-19 pandemic has directly and indirectly negatively impacted the global economy, disrupted global supply chains, adversely affected equity market valuations, created significant volatility and disruption in financial and capital markets, resulted in challenging labor market conditions, and adversely impacted our financial results to varying degrees and in various respects. The future direct and indirect effects of the pandemic on global health and economic conditions and activity remain uncertain, continue to evolve by region, country and state and depend on future developments that cannot be predicted, including impacts from the expiration of the federal COVID-19 Public Health Emergency, surges of COVID-19 cases and the spread of more dangerous variants of COVID-19, the availability, usage and acceptance of effective medical treatments and vaccines, changing client preferences and behavior and future public response and government actions, including travel bans and restrictions, and limitations on business. Such evolving impacts of the pandemic could disrupt the U.S. and global economy, including changes in financial and capital markets, and adversely affect our businesses and operations, liquidity, results of operations and financial condition, including from increased allowance for credit losses and noninterest expenses, which are dependent on the pandemic's duration and severity.

Reforms to and replacement of IBORs and certain other rates or indices may adversely affect our reputation, business, financial condition and results of operations.

Though significant progress has been made in the global financial markets to replace products and contracts referencing London Interbank Offered Rate (LIBOR) or other IBORs (IBOR Products), the aggregate notional amount of these IBOR Products remains material to our business. Risks and challenges associated with the transition from IBORs remain and may result in consequences that cannot be fully anticipated, which expose us to various financial, operational, supervisory, conduct and legal risk.

While there has been significant progress in market and client adoption of ARRs, usage of ARRs may vary across or within categories of contracts, products and services, potentially resulting in market fragmentation, decreased trading volumes and liquidity, increased complexity and modeling and operational risks. ARRs have compositions and characteristics that differ from the benchmarks they replace, in some cases they have limited liquidity, and may demonstrate less predictable performance over time than the benchmarks they replace. For example, certain ARRs are calculated on a compounded or weighted-average basis and, unlike IBORs, do not reflect bank credit risk and therefore typically require a spread adjustment. There are important differences between the fallbacks, triggers and calculation methodologies being implemented in cash and derivatives markets. Any mismatch between the adoption of ARRs in loans, securities and derivatives markets may impact hedging or other financial arrangements we have implemented, and we may experience unanticipated market exposures. Changes resulting from transition to successor or alternative rates may adversely affect the yield on loans or securities held by us, amounts paid on securities we have issued, amounts received and paid on derivatives we have entered into, the value of such loans, securities or derivative instruments, the trading market for such products and contracts, and our ability to effectively use hedging instruments to manage risk. There can be no assurance that existing assets and liabilities based on or linked to IBORs that have not already transitioned to ARRs will transition without delay or potential disputes.

Although a significant majority of the aggregate notional amount of our remaining IBOR Products maturing after 2022 include or have been amended to include fallbacks to ARRs, the transitioning of certain IBOR Products that do not include fallback provisions or adequate fallback mechanisms require additional efforts to modify their terms. Some outstanding IBOR Products are particularly challenging to modify due to the requirement that all impacted parties consent to such modification. To address outstanding IBOR Products that are difficult to modify, legislation has been adopted in the U.S. and in other jurisdictions. Litigation, disputes or other action may occur as a result of the interpretation or application of legislation or regulations, including if there is an overlap between laws or regulations in different jurisdictions or from interactions with any FCA-compelled "synthetic" LIBOR settings.

Some of our IBOR Products may contain language giving the calculation agent (which may be us) discretion to determine the successor rate (including the applicable spread adjustment) to the existing benchmark. We may face a risk of litigation, disputes or other actions from clients, counterparties, customers, investors or others based on various claims, for example, that we incorrectly interpreted or enforced IBOR-based contract provisions, failed to appropriately communicate the effect that the transition to ARRs will have on existing and future products, treated affected parties unfairly or made inappropriate product recommendations to or investments on behalf of its clients, or engaged in anti-competitive behavior or unlawfully manipulated markets or benchmarks.

ARR-based products that we develop, launch and/or support, including products using credit sensitive rates, may perform differently to IBOR Products during times of economic stress,

adverse or volatile market conditions and across the credit and economic cycle, which may impact the value, return on and profitability of our ARR-based assets. New financial products linked to ARRs may have additional legal, financial, tax, operational, market, compliance, reputational, competitive or other risks to us, our clients and other market participants. Banking regulators in the U.S. and globally have maintained heightened regulatory scrutiny and intensified supervisory focus on financial institution LIBOR transition plans, preparations and readiness, including our use of credit-sensitive rates like the Bloomberg Short-Term Bank Yield Index and ARR-based term rates, which could result in regulatory action, litigation and/or the need to change the products offered by our businesses. Failure to meet industry-wide IBOR transition milestones and to cease issuance of IBOR Products by relevant cessation dates may, subject to certain regulatory exceptions, result in supervisory enforcement by applicable regulators, increase our cost of, and access to, capital or lead to other consequences.

The ongoing market transition has altered, and additional developments may further alter, some aspects of our risk profile and risk management strategies, including derivatives and hedging strategies, modeling and analytics, valuation tools, product design and systems, controls, procedures and operational infrastructure. Further changes may increase costs and expose us to potential risks related to regulatory compliance, requirements or inquiries. Among other risks, various IBOR Products transition to ARRs at different times or in different manners, with the result that we may face unexpected interest rate, pricing or other exposures across business or product lines, and we may face operational risks related to planned processes at certain CCPs to convert outstanding USD LIBOR-cleared derivatives to ARR positions. Continuing reforms to market transition and other factors may adversely affect our business, including the ability to serve customers and maintain market share, financial condition or results of operations and could result in reputational harm to us.

We face significant and increasing competition in the financial services industry.

We operate in a highly competitive environment and experience intense competition from local and global financial institutions and new entrants in domestic and foreign markets. We compete on the basis of a number of factors, including customer service and convenience, the pricing, quality and range of products and services we offer, lending limits, the quality and delivery of our technology and our reputation, experience and relationships in relevant markets. There is increasing pressure to provide products and services on more attractive terms, including lower fees and higher interest rates on deposits, and lower cost investment strategies, which may impact our ability to effectively compete. The changing regulatory environment may also create competitive disadvantages, including from different regulatory requirements.

Emerging technologies and the growth of e-commerce have lowered geographic and monetary barriers of other financial institutions, made it easier for non-depository institutions to offer traditional banking products and services and allowed non-traditional financial service providers and technology companies to compete with traditional financial service companies in providing electronic and internet-based financial solutions and services, including electronic securities trading with low or no fees and commissions, marketplace lending, financial data aggregation and payment processing services, including real-time payment platforms. Further, clients may choose to conduct business with other market participants who engage in business or offer products in areas we deem speculative or risky as an alternative to traditional banking products. Increased competition may reduce our net interest margin and revenues from our fee-based products and services and negatively affect our earnings, including by pressuring us to lower pricing or credit standards, requiring additional investment to improve the quality and delivery of our technology, reducing our market share and/or affecting the willingness of our clients to do business with us.

Our inability to adapt our business strategies, products and services could harm our business.

We rely on a diversified mix of businesses that deliver a broad range of financial products and services through multiple distribution channels. Our success depends on our and our third-party providers' of products and services abilities to adapt our business strategies, products and services and their respective features in a timely manner, including available payment processing services and technology to rapidly evolving industry standards and consumer preferences.

The widespread adoption and rapid evolution of emerging technologies, including analytic capabilities, self-service digital trading platforms and automated trading markets, internet services, and digital assets, such as central bank digital currencies, cryptocurrencies (including stablecoins), tokens and other cryptoassets that utilize distributed ledger technology (DLT), as well as DLT in payment, clearing and settlement processes creates additional risks, could negatively impact our ability to compete and require substantial expenditures to the extent we were to modify or adapt our existing products and services. As such new technologies evolve and mature, our businesses and results of operations could be adversely impacted, including as a result of the introduction of new competitors to the payment ecosystem and increased volatility in deposits and/or significant long-term reduction in deposits (i.e., financial disintermediation). Also, we may not be as timely or successful in developing or introducing new products and services, integrating new products or services into our existing offerings, responding, managing or adapting to changes in consumer behavior, preferences, spending, investing and/or saving habits, achieving market acceptance of our products and services, reducing costs in response to pressures to deliver products and services at lower prices or sufficiently developing and maintaining loyal customers. The Corporation's, or its third-party providers', inability or resistance to timely innovate or adapt its operations, products and services to evolving industry standards and consumer preferences could result in service disruptions and harm our business and adversely affect our results of operations and reputation.

We could suffer operational, reputational and financial harm if our models fail to properly anticipate and manage risk.

We use models extensively to forecast losses, project revenue and expenses, assess and control our operations and financial condition, assist in capital planning and measure, forecast and assess capital and liquidity requirements for credit, market, operational and strategic risks. Under our Enterprise Model Risk Policy, Model Risk Management is required to perform model oversight, including independent validation before initial use, ongoing monitoring reviews through outcomes analysis and benchmarking, and periodic revalidation. However, models are subject to inherent limitations from simplifying assumptions, uncertainty regarding economic and financial outcomes, and emerging risks from applications that rely on AI.

Our models may not be sufficiently predictive of future results due to limited historical patterns, extreme or unanticipated market movements or customer behavior and liquidity, especially during severe market downturns or stress events (e.g., geopolitical or pandemic events), which could limit

their effectiveness and require timely recalibration. The models that we use to assess and control our market risk exposures also reflect assumptions about the degree of correlation among prices of various asset classes or other market indicators, which may not be representative of the next downturn and would magnify the limitations inherent in using historical data to manage risk. Market conditions in recent years have involved unprecedented dislocations and highlight the limitations inherent in using historical data to manage risk. Our models may also be adversely impacted by human error and may not be effective if we fail to properly oversee and review them at regular intervals and detect their flaws during our review and monitoring processes, they contain erroneous data, assumptions, valuations, formulas or algorithms or our applications running the models do not perform as expected. Regardless of the steps we take to help confirm effective controls, governance, monitoring and testing, and implement new technology and automated processes, we could suffer operational, reputational and financial harm, including funding or liquidity shortfalls, if models fail to properly anticipate and manage risks.

Failure to properly manage data may result in our inability to manage risk and business needs, errors in our operations, critical reporting and strategic decision-making, inaccurate reporting and non-compliance with laws, rules and regulations.

We rely on our ability to manage and process data in an accurate, timely and complete manner, including capturing, transporting, aggregating, using, transmitting data externally, and retaining and protecting data appropriately. While we continually update our policies, programs, processes and practices and implement emerging technologies, such as automation, AI and robotics, our data management processes may not be effective and are subject to weaknesses and failures, including human error, data limitations, process delays, system failure or failed controls. Failure to properly manage data effectively in an accurate, timely and complete manner may adversely impact its quality and reliability and our ability to manage current and emerging risk, produce accurate financial and non-financial, regulatory and operational reporting, detect or surveil potential misconduct or non-compliance with laws, rules and regulations, as well as to manage changing business needs, strategic decision-making, resolution strategy and operations. The failure to establish and maintain effective, efficient and controlled data management could adversely impact our ability to develop our products and relationships with our customers, increase regulatory risk and operational losses, and damage our reputation.

Our operations, businesses and customers could be adversely affected by the impacts related to climate change.

Climate change and related environmental sustainability matters present short-term and long-term risks to us. The physical risks include an increase in the frequency and severity of extreme weather events and natural disasters, including floods, wildfires, hurricanes and tornados, as well as chronic longer-term shifts such as rising average global temperatures and sea levels. Such disasters could impact our facilities and employees and disrupt our operations or the operations of customers or third parties, and result in market volatility or negatively impact our customers' ability to repay outstanding loans, result in rapid deposit outflows or drawdowns of credit facilities, cause supply chain and/or distribution network disruptions, damage collateral or result in the deterioration of the value of collateral or insurance shortfalls.

There is also increasing risk related to the transition to a low-carbon economy. Changes in consumer preferences, market pressures, advancements in technology and additional legislation, regulatory and legal requirements could alter the scope of our existing businesses, limit our ability to pursue certain business activities and offer certain products and services, amplify credit and market risks, negatively impact asset values and increase expenses, including as a result of legal, compliance and public disclosure costs in the U.S. and globally with potential jurisdictional divergence, strategic planning, required capital expenditures and changes in technology and markets, including supply chain and insurance availability and cost. We have devoted and expect to continue to devote additional resources as a result of our response to climate change. Our climate change strategies, policies, and disclosures, our ability to achieve our climate-related goals, targets and commitments, and/or the environmental or climate impacts attributable to our products, transactions or services will likely result in heightened legal and compliance risk and could result in reputational harm as a result of negative public sentiment, regulatory scrutiny, litigation and reduced investor and stakeholder confidence. Our ability to meet our climate-related goals, targets and commitments, including our goal to achieve certain greenhouse gas (GHG) emissions targets by 2030 and net zero GHG emissions in our financing activities, operations and supply chain before 2050, is subject to risks and uncertainties, many of which are outside of our control, such as technology advances, clearly defined roadmaps for industry sectors, public policies and better emissions data reporting, and ongoing engagement with customers, suppliers, investors, government officials and other stakeholders.

There are and will continue to be challenges related to capturing, verifying, analyzing and disclosing climate-related data, which includes nonfinancial data and other information that is subject to measurement uncertainties, may not be independently verified, and may result in legal or reputational harm.

Our ability to attract, develop and retain qualified employees is critical to our success, business prospects and competitive position.

Our performance and competitive position is heavily dependent on the talents, development and efforts of highly skilled individuals. Competition for qualified personnel within the financial services industry and from businesses outside the financial services industry is intense.

Our competitors include global institutions and institutions subject to different compensation and hiring regulations than those imposed on U.S. institutions and financial institutions. Also, our ability to attract, develop and retain employees could be impacted by changing workforce concerns, expectations, practices and preferences (including remote work), and increasing labor shortages and competition for labor, which could increase labor costs.

In order to attract and retain qualified personnel, we must provide market-level compensation. As a large financial and banking institution, we are and may become subject to additional limitations on compensation practices by the Federal Reserve, the OCC, the FDIC and other regulators around the world, which may or may not affect our competitors. Furthermore, because a substantial portion of our annual incentive compensation paid to many of our employees is long-term equity-based awards based on the value of our common stock, declines in our profitability or outlook could adversely affect the ability to attract and retain employees. If we are unable to continue to attract, develop and retain qualified individuals, our business prospects and competitive position could be adversely affected.

Item 1B. Unresolved Staff Comments

None

Item 2. Properties

As of December 31, 2022, certain principal offices and other materially important properties consisted of the following:

Facility Name	Location	General Character of the Physical Property	Primary Business Segment	Property Status	Property Square Feet [1]
Bank of America Corporate Center	Charlotte, NC	60 Story Building	Principal Executive Offices	Owned	1,212,177
Bank of America Tower at One Bryant Park	New York, NY	55 Story Building	*GWIM, Global Banking* and *Global Markets*	Leased [2]	1,836,575
Bank of America Financial Centre	London, UK	4 Building Campus	*Global Banking* and *Global Markets*	Leased	502,344
Cheung Kong Center	Hong Kong	62 Story Building	*Global Banking* and *Global Markets*	Leased	149,790

[1] For leased properties, property square feet represents the square footage occupied by the Corporation.
[2] The Corporation has a 49.9 percent joint venture interest in this property.

We own or lease approximately 69.5 million square feet in over 20,000 facilities and ATM locations globally, including approximately 63.9 million square feet in the U.S. (all 50 states and the District of Columbia, the U.S. Virgin Islands, Puerto Rico and Guam) and approximately 5.6 million square feet in more than 35 countries.

We believe our owned and leased properties are adequate for our business needs and are well maintained. We continue to evaluate our owned and leased real estate and may determine from time to time that certain of our premises and facilities, or ownership structures, are no longer necessary for our operations. In connection therewith, we regularly evaluate the sale or sale/leaseback of certain properties, and we may incur costs in connection with any such transactions.

Item 3. Legal Proceedings

See Litigation and Regulatory Matters in *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements, which is incorporated herein by reference.

Item 4. Mine Safety Disclosures

None

Part II

Bank of America Corporation and Subsidiaries

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The principal market on which our common stock is traded is the New York Stock Exchange under the symbol "BAC." As of February 21, 2023, there were 143,301 registered shareholders of common stock.

The table below presents common share repurchase activity for the three months ended December 31, 2022. The primary source of funds for cash distributions by the Corporation to its shareholders is dividends received from its bank subsidiaries. Each of the bank subsidiaries is subject to various regulatory policies and requirements relating to the payment of dividends, including requirements to maintain capital above regulatory minimums. All of the Corporation's preferred stock outstanding has preference over the Corporation's common stock with respect to payment of dividends.

(Dollars in millions, except per share information; shares in thousands)	Total Common Shares Purchased [1,2]	Weighted-Average Per Share Price	Total Shares Purchased as Part of Publicly Announced Programs [2]	Remaining Buyback Authority Amounts [3]
October 1 - 31, 2022	2,018	$ 34.68	2,018	$ 16,332
November 1 - 30, 2022	17,085	37.14	16,961	15,949
December 1 - 31, 2022	9,133	32.67	9,117	15,783
Three months ended December 31, 2022	**28,236**	**35.52**	**28,096**	

[1] Includes 140 thousand shares of the Corporation's common stock acquired by the Corporation in connection with satisfaction of tax withholding obligations on vested restricted stock or restricted stock units and certain forfeitures and terminations of employment-related awards and for potential re-issuance to certain employees under equity incentive plans.
[2] In October 2021, the Corporation's Board of Directors (Board) authorized the repurchase of up to $25 billion of common stock over time (October 2021 Authorization). Additionally, the Board authorized repurchases to offset shares awarded under equity-based compensation plans. During the three months ended December 31, 2022, pursuant to the Board's authorizations, the Corporation repurchased approximately 28 million shares, or $998 million, of its common stock, including repurchases to offset shares awarded under equity-based compensation plans. For more information, see Capital Management - CCAR and Capital Planning in the MD&A on page 49 and *Note 13 – Shareholders' Equity* to the Consolidated Financial Statements.
[3] Remaining Buyback Authority Amounts represents the remaining buyback authority of the October 2021 Authorization. Excludes repurchases to offset shares awarded under equity-based compensation plans.

Depositary Share Repurchases

On December 13, 2022, following the expiration of its cash tender offers, BofA Securities, Inc. (BofAS), a wholly owned indirect subsidiary of Bank of America Corporation (Parent), acquired depositary shares representing fractional interests in shares of the Parent's preferred stock registered under Section 12 of the Securities Exchange Act of 1934, as amended, in the amounts and for the per share total price set forth in the following table. Also on December 13, 2022, the Parent acquired from BofAS such depositary shares that were previously purchased by BofAS for the same per share price.

Depositary Shares Representing Fractional Interests in Series of Bank of America Preferred Stock	Total Number of Depositary Shares Purchased	Per Depositary Share [1]		
		Purchase Price	Accrued Dividends	Total Price Paid [2]
Depositary Shares, each representing a 1/1,000th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series E	373,745	$ 19.22	$ 0.0963694	$ 19.3163694
Depositary Shares, each representing a 1/1,000th interest in a share of 5.875% Non-Cumulative Preferred Stock, Series HH	110,762	24.08	0.1999132	24.2799132
Depositary Shares, each representing a 1/1,000th interest in a share of 5.375% Non-Cumulative Preferred Stock, Series KK	627,514	22.12	n/a	22.1200000
Depositary Shares, each representing a 1/1,000th interest in a share of 5.000% Non-Cumulative Preferred Stock, Series LL	355,040	20.44	n/a	20.4400000
Depositary Shares, each representing a 1/1,000th interest in a share of 4.375% Non-Cumulative Preferred Stock, Series NN	1,006,802	18.20	0.1215278	18.3215278
Depositary Shares, each representing a 1/1,000th interest in a share of 4.125% Non-Cumulative Preferred Stock, Series PP	99,685	17.27	0.1174479	17.3874479
Depositary Shares, each representing a 1/1,000th interest in a share of 4.250% Non-Cumulative Preferred Stock, Series QQ	121,078	17.30	0.0767361	17.3767361
Depositary Shares, each representing a 1/1,000th interest in a share of 4.750% Non-Cumulative Preferred Stock, Series SS	537,327	19.90	0.0857639	19.9857639
Depositary Shares, each representing a 1/1,200th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series 1	106,361	18.92	0.0571489	18.9771489
Depositary Shares, each representing a 1/1,200th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series 5	870,231	19.17	0.0790691	19.2490691

(1) The liquidation preference attributable to each depositary share is $25.00.
(2) The total price paid per depositary shares equals the applicable Purchase Price for such depositary shares, plus, if applicable, the Accrued Dividends for such depositary shares.
n/a = not applicable

The Corporation did not have any unregistered sales of equity securities during the three months ended December 31, 2022.

Item 6. [Reserved]

Item 7. Bank of America Corporation and Subsidiaries

Management's Discussion and Analysis of Financial Condition and Results of Operations

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Management's Discussion and Analysis of Financial Condition and Results of Operations

Bank of America Corporation (the Corporation) and its management may make certain statements that constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often use words such as "anticipates," "targets," "expects," "hopes," "estimates," "intends," "plans," "goals," "believes," "continue" and other similar expressions or future or conditional verbs such as "will," "may," "might," "should," "would" and "could." Forward-looking statements represent the Corporation's current expectations, plans or forecasts of its future results, revenues, provision for credit losses, expenses, efficiency ratio, capital measures, strategy and future business and economic conditions more generally, and other future matters. These statements are not guarantees of future results or performance and involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and are often beyond the Corporation's control. Actual outcomes and results may differ materially from those expressed in, or implied by, any of these forward-looking statements.

You should not place undue reliance on any forward-looking statement and should consider the following uncertainties and risks, as well as the risks and uncertainties more fully discussed under Item 1A. Risk Factors of this Annual Report on Form 10-K: and in any of the Corporation's subsequent Securities and Exchange Commission filings: the Corporation's potential judgments, orders, settlements, penalties, fines and reputational damage resulting from pending or future litigation and regulatory investigations, proceedings and enforcement actions, including as a result of our participation in and execution of government programs related to the Coronavirus Disease 2019 (COVID-19) pandemic, such as the processing of unemployment benefits for California and certain other states; the possibility that the Corporation's future liabilities may be in excess of its recorded liability and estimated range of possible loss for litigation, and regulatory and government actions; the possibility that the Corporation could face increased claims from one or more parties involved in mortgage securitizations; the Corporation's ability to resolve representations and warranties repurchase and related claims; the risks related to the discontinuation of the London Interbank Offered Rate and other reference rates, including increased expenses and litigation and the effectiveness of hedging strategies; uncertainties about the financial stability and growth rates of non-U.S. jurisdictions, the risk that those jurisdictions may face difficulties servicing their sovereign debt, and related stresses on financial markets, currencies and trade, and the Corporation's exposures to such risks, including direct, indirect and operational; the impact of U.S. and global interest rates, inflation, currency exchange rates, economic conditions, trade policies and tensions, including tariffs, and potential geopolitical instability; the impact of the interest rate, inflationary and macroeconomic environment on the Corporation's business, financial condition and results of operations; the possibility that future credit losses may be higher than currently expected due to changes in economic assumptions, customer behavior, adverse developments with respect to U.S. or global economic conditions and other uncertainties, including the impact of supply chain disruptions, inflationary pressures and labor shortages on economic conditions and our business; potential losses related to the Corporation's concentration of credit risk; the Corporation's ability to achieve its expense targets and expectations regarding revenue, net interest income, provision for credit losses, net charge-offs, effective tax rate, loan growth or other projections; adverse changes to the Corporation's credit ratings from the major credit rating agencies; an inability to access capital markets or maintain deposits or borrowing costs; estimates of the fair value and other accounting values, subject to impairment assessments, of certain of the Corporation's assets and liabilities; the estimated or actual impact of changes in accounting standards or assumptions in applying those standards; uncertainty regarding the content, timing and impact of regulatory capital and liquidity requirements; the impact of adverse changes to total loss-absorbing capacity requirements, stress capital buffer requirements and/or global systemically important bank surcharges; the potential impact of actions of the Board of Governors of the Federal Reserve System on the Corporation's capital plans; the effect of changes in or interpretations of income tax laws and regulations; the impact of implementation and compliance with U.S. and international laws, regulations and regulatory interpretations, including, but not limited to, recovery and resolution planning requirements, Federal Deposit Insurance Corporation assessments, the Volcker Rule, fiduciary standards, derivatives regulations and the Coronavirus Aid, Relief, and Economic Security Act and any similar or related rules and regulations; a failure or disruption in or breach of the Corporation's operational or security systems or infrastructure, or those of third parties, including as a result of cyber-attacks or campaigns; the risks related to the transition and physical impacts of climate change; our ability to achieve environmental, social and governance goals and commitments or the impact of any changes in the Corporation's sustainability strategy or commitments generally; the impact of any future federal government shutdown and uncertainty regarding the federal government's debt limit or changes in fiscal, monetary or regulatory policy; the emergence or continuation of widespread health emergencies or pandemics, including the magnitude and duration of the COVID-19 pandemic and its impact on U.S. and/or global financial market conditions and our business, results of operations, financial condition and prospects; the impact of natural disasters, extreme weather events, military conflict (including the Russia/Ukraine conflict, the possible expansion of such conflict and potential geopolitical consequences), terrorism or other geopolitical events; and other matters.

Forward-looking statements speak only as of the date they are made, and the Corporation undertakes no obligation to update any forward-looking statement to reflect the impact of circumstances or events that arise after the date the forward-looking statement was made.

Notes to the Consolidated Financial Statements referred to in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) are incorporated by reference into the MD&A. Certain prior-year amounts have been reclassified to conform to current-year presentation. Throughout the MD&A, the Corporation uses certain acronyms and abbreviations which are defined in the Glossary.

Executive Summary

Business Overview

The Corporation is a Delaware corporation, a bank holding company (BHC) and a financial holding company. When used in this report, "Bank of America," "the Corporation," "we," "us" and "our" may refer to Bank of America Corporation individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates. Our

principal executive offices are located in Charlotte, North Carolina. Through our various bank and nonbank subsidiaries throughout the U.S. and in international markets, we provide a diversified range of banking and nonbank financial services and products through four business segments: *Consumer Banking*, *Global Wealth & Investment Management (GWIM)*, *Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*. We operate our banking activities primarily under the Bank of America, National Association (Bank of America, N.A. or BANA) charter. At December 31, 2022, the Corporation had $3.1 trillion in assets and a headcount of approximately 217,000 employees.

As of December 31, 2022, we served clients through operations across the U.S., its territories and more than 35 countries. Our retail banking footprint covers all major markets in the U.S., and we serve approximately 67 million consumer and small business clients with approximately 3,900 retail financial centers, approximately 16,000 ATMs, and leading digital banking platforms (www.bankofamerica.com) with approximately 44 million active users, including approximately 35 million active mobile users. We offer industry-leading support to approximately three million small business households. Our *GWIM* businesses, with client balances of $3.4 trillion, provide tailored solutions to meet client needs through a full set of investment management, brokerage, banking, trust and retirement products. We are a global leader in corporate and investment banking and trading across a broad range of asset classes serving corporations, governments, institutions and individuals around the world.

Recent Developments

Capital Management

On February 1, 2023, the Corporation's Board of Directors (the Board) declared a quarterly common stock dividend of $0.22 per share, payable on March 31, 2023 to shareholders of record as of March 3, 2023.

For more information on our capital resources, see Capital Management on page 49.

Changes in U.S. Tax Law

On August 16, 2022, the U.S. enacted the Inflation Reduction Act of 2022, which contained a number of tax-related provisions. The tax changes included the extension and expansion of renewable energy tax credit programs, the establishment of a new 15 percent alternative minimum tax (AMT) on adjusted financial statement income for large corporations and a one percent excise tax on stock repurchases. For more information, see Financial Highlights – Income Tax Expense on page 29.

Russia/Ukraine Conflict

Due to the Russia/Ukraine conflict, there has been significant volatility in financial and commodities markets, and multiple jurisdictions have implemented various economic sanctions. At December 31, 2022 and 2021, our direct net country exposure to Russia was $443 million and $733 million, primarily consisting of outstanding loans and leases totaling $391 million and $686 million, and our net country exposure to Ukraine was not significant. While the Corporation's direct exposure to Russia is limited, the potential duration, course and impact of the Russia/Ukraine conflict remain uncertain and could adversely affect macroeconomic and geopolitical conditions, which could negatively impact the Corporation's businesses, results of operations and financial position. For more information on the risks related to the Russia/Ukraine conflict, see the Market, Credit and Geopolitical sections in Item 1A. Risk Factors on page 8.

LIBOR and Other Benchmark Rates

After December 31, 2021, ICE Benchmark Administration (IBA) ceased publishing British Pound Sterling (GBP), Euro, Swiss Franc, and Japanese Yen (JPY) London Interbank Offered Rate (LIBOR) settings and one-week and two-month U.S. dollar (USD) LIBOR settings, subject to the continued publication of certain non-representative LIBOR settings based on a modified calculation (i.e., on a "synthetic" basis). The remaining USD LIBOR settings (i.e., overnight, one month, three month, six month and 12 month) will cease or become non-representative immediately after June 30, 2023, although the Financial Conduct Authority (FCA) has issued a consultation seeking views on whether to compel publication of the one-month, three-month and six-month USD LIBOR settings on a "synthetic" basis for a short time after June 30, 2023 (i.e., through September 30, 2024). Separately, the Federal Reserve, the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation (FDIC) issued supervisory guidance encouraging banks to cease entering into new contracts that use USD LIBOR as a reference rate by December 31, 2021, subject to certain regulatory-approved exceptions (USD LIBOR Guidance).

As a result, a major transition has been and continues to be in progress in the global financial markets with respect to the replacement of Interbank Offered Rates (IBORs). This has been and continues to be a complex process impacting a variety of our businesses and operations. IBORs have historically been used in many of the Corporation's products and contracts, including derivatives, consumer and commercial loans, mortgages, floating-rate notes and other adjustable-rate products and financial instruments. In response, the Corporation established an enterprise-wide IBOR transition program, with active involvement of senior management and regular reports to the Management Risk Committee (MRC) and Enterprise Risk Committee (ERC). The program continues to drive the Corporation's industry and regulatory engagement, client and financial contract changes, internal and external communications, technology and operations modifications, including updates to its operational models, systems and processes, introduction of new products, migration of existing clients, and program strategy and governance.

As of December 31, 2021, the Corporation transitioned or otherwise addressed IBOR-based products and contracts referencing the rates that ceased or became non-representative after December 31, 2021, including LIBOR-linked commercial loans, LIBOR-based adjustable-rate consumer mortgages, LIBOR-linked derivatives and interdealer trading of certain USD LIBOR and other interest rate swaps, and related hedging arrangements. Additionally, in accordance with the USD LIBOR Guidance, the Corporation has ceased entering into new contracts that use USD LIBOR as a reference rate, subject to limited exceptions, including those consistent with supervisory guidance.

The Corporation launched capabilities and services to support the issuance of and trading in products indexed to various alternative reference rates (ARRs) and developed employee training programs as well as other internal and external sources of information on the various challenges and opportunities that the replacement of IBORs has presented and continues to present. The Corporation continues to monitor a variety of market scenarios as part of its transition efforts, including risks associated with insufficient preparation by

individual market participants or the overall market ecosystem, ability of market participants to meet regulatory and industry-wide recommended milestones, and access and demand by clients and market participants to liquidity in certain products, including LIBOR products.

With respect to the transition of LIBOR products referencing USD LIBOR settings ceasing or becoming non-representative as of June 30, 2023, a significant majority of the Corporation's notional contractual exposure to such LIBOR settings, of which the significant majority is derivatives contracts, have been remediated (i.e., updated to include fallback provisions to ARRs based on market-driven protocols, regulatory guidance and industry-recommended fallback provisions and related mechanisms), and the Corporation is continuing to remediate the remaining USD LIBOR exposure. For example, during the first half of 2023, certain central counterparties (CCPs) expect to complete processes to convert outstanding USD LIBOR-cleared derivatives to ARR positions. The remaining exposure, a majority of which is made up of derivatives and commercial loans and which represents a small minority of outstanding USD LIBOR notional contractual exposure of the Corporation, requires active dialogue with clients to modify the contracts. For any residual exposures after June 2023 that continue to have no fallback provisions, the Corporation continues to assess and plans to leverage relevant contractual and statutory solutions, including the Adjustable Interest Rate (LIBOR) Act in the U.S. (as implemented by the Federal Reserve) and "synthetic" USD LIBOR (if the FCA compels such publication), to transition such exposure.

While there remain risks to the Corporation associated with the transition from IBORs (as discussed under Item 1A. Risk Factors – Other on page 20), such risks have been monitored and, where applicable, managed through the Corporation's efforts and dedicated operational resources to date. In the Corporation's view, the potential likelihood and/or impact of transition-related risks has lessened over time, and the Corporation anticipates it has devoted appropriate resources to remaining transition efforts and will be able to continue to appropriately monitor and manage such risks as the transition process continues. The Corporation expects transition-related risks to further diminish as certain market developments occur prior to June 30, 2023.

The Corporation has implemented regulatory, tax and accounting changes and continues to monitor current and potential impacts of the transition, including Internal Revenue Service tax regulations and guidance and Financial Accounting Standards Board guidance. In addition, the Corporation has engaged impacted clients in connection with the transition by providing education on ARRs and the timing of transition events. The Corporation is also working actively with global regulators, industry working groups and trade associations.

For more information on the expected replacement of LIBOR and other benchmark rates, see Item 1A. Risk Factors – Other on page 20.

Financial Highlights

Table 1 Summary Income Statement and Selected Financial Data

(Dollars in millions, except per share information)	2022	2021
Income statement		
Net interest income	**$ 52,462**	$ 42,934
Noninterest income	**42,488**	46,179
Total revenue, net of interest expense	**94,950**	89,113
Provision for credit losses	**2,543**	(4,594)
Noninterest expense	**61,438**	59,731
Income before income taxes	**30,969**	33,976
Income tax expense	**3,441**	1,998
Net income	**27,528**	31,978
Preferred stock dividends and other	**1,513**	1,421
Net income applicable to common shareholders	**$ 26,015**	$ 30,557
Per common share information		
Earnings	**$ 3.21**	$ 3.60
Diluted earnings	**3.19**	3.57
Dividends paid	**0.86**	0.78
Performance ratios		
Return on average assets [1]	**0.88 %**	1.05 %
Return on average common shareholders' equity [1]	**10.75**	12.23
Return on average tangible common shareholders' equity [2]	**15.15**	17.02
Efficiency ratio [1]	**64.71**	67.03
Balance sheet at year end		
Total loans and leases	**$ 1,045,747**	$ 979,124
Total assets	**3,051,375**	3,169,495
Total deposits	**1,930,341**	2,064,446
Total liabilities	**2,778,178**	2,899,429
Total common shareholders' equity	**244,800**	245,358
Total shareholders' equity	**273,197**	270,066

(1) For definitions, see Key Metrics on page 167.
(2) Return on average tangible common shareholders' equity is a non-GAAP financial measure. For more information and a corresponding reconciliation to the most closely related financial measures defined by accounting principles generally accepted in the United States of America (GAAP), see Non-GAAP Reconciliations on page 85.

Net income was $27.5 billion, or $3.19 per diluted share in 2022 compared to $32.0 billion, or $3.57 per diluted share in 2021. The decrease in net income was primarily due to an increase in provision for credit losses, lower noninterest income and higher noninterest expense, partially offset by higher net interest income.

For discussion and analysis of our consolidated and business segment results of operations for 2021 compared to 2020, see Financial Highlights and Business Segment Operations sections in the MD&A of the Corporation's 2021 Annual Report on Form 10-K.

Net Interest Income

Net interest income increased $9.5 billion to $52.5 billion in 2022 compared to 2021. Net interest yield on a fully taxable-equivalent (FTE) basis increased 30 basis points (bps) to 1.96 percent for 2022. The increase was primarily driven by benefits from higher interest rates, including lower premium amortization expense, and loan growth, partially offset by a lower amount of accelerated net capitalized loan fees due to Paycheck Protection Program (PPP) loan forgiveness, which primarily occurred in 2021. For more information on net interest yield and the FTE basis, see Supplemental Financial Data on page 32, and for

more information on interest rate risk management, see Interest Rate Risk Management for the Banking Book on page 79.

Noninterest Income

Table 2 Noninterest Income

(Dollars in millions)	2022	2021
Fees and commissions:		
Card income	$ 6,083	$ 6,218
Service charges	6,405	7,504
Investment and brokerage services	15,901	16,690
Investment banking fees	4,823	8,887
Total fees and commissions	33,212	39,299
Market making and similar activities	12,075	8,691
Other income	(2,799)	(1,811)
Total noninterest income	**$ 42,488**	$ 46,179

Noninterest income decreased $3.7 billion to $42.5 billion for 2022 compared to 2021. The following highlights the significant changes.

- Service charges decreased $1.1 billion primarily driven by the impact of non-sufficient funds and overdraft policy changes as well as lower treasury service charges.
- Investment and brokerage services decreased $789 million primarily driven by lower market valuations and declines in assets under management (AUM) pricing, partially offset by positive AUM flows.
- Investment banking fees decreased $4.1 billion primarily driven by a decline in demand resulting in lower equity and debt issuance fees and lower advisory fees.
- Market making and similar activities increased $3.4 billion primarily driven by improved performance across macro products in fixed income, currencies and commodities (FICC) and by the impact of higher interest rates on client financing activities in Equities.
- Other income decreased $988 million primarily due to certain valuation adjustments.

Provision for Credit Losses

The provision for credit losses increased $7.1 billion to $2.5 billion for 2022 compared to 2021. The provision for credit losses for 2022 was primarily driven by loan growth and a dampened macroeconomic outlook, partially offset by a reserve release for reduced COVID-19 pandemic (the pandemic) uncertainties. For the same period in the prior year, the benefit in the provision for credit losses was due to an improved macroeconomic outlook. For more information on the provision for credit losses, see Allowance for Credit Losses on page 73.

Noninterest Expense

Table 3 Noninterest Expense

(Dollars in millions)	2022	2021
Compensation and benefits	$ 36,447	$ 36,140
Occupancy and equipment	7,071	7,138
Information processing and communications	6,279	5,769
Product delivery and transaction related	3,653	3,881
Marketing	1,825	1,939
Professional fees	2,142	1,775
Other general operating	4,021	3,089
Total noninterest expense	**$ 61,438**	$ 59,731

Noninterest expense increased $1.7 billion to $61.4 billion in 2022 compared to 2021. The increase was primarily due to higher investments in people and technology, expense associated with the settlement of the legacy monoline insurance litigation and expense related to certain regulatory matters, partially offset by lower net COVID-19 related costs.

Income Tax Expense

Table 4 Income Tax Expense

(Dollars in millions)	2022	2021
Income before income taxes	$ 30,969	$ 33,976
Income tax expense	3,441	1,998
Effective tax rate	11.1 %	5.9 %

Income tax expense was $3.4 billion for 2022 compared to $2.0 billion in 2021 resulting in an effective tax rate of 11.1 percent compared to 5.9 percent.

The effective tax rates for 2022 and 2021 were primarily driven by our recurring preference benefits. Also included in the effective tax rate for 2021 was the impact of the 2021 U.K. tax law change further discussed in this section. For more information on our recurring tax preference benefits, see *Note 19 – Income Taxes* to the Consolidated Financial Statements. Absent environmental, social and governance (ESG) tax credits and discrete tax benefits, the effective tax rates would have been approximately 25 percent.

On August 16, 2022, the U.S. enacted the Inflation Reduction Act of 2022, which contained a number of tax-related provisions, including the extension and expansion of renewable energy tax credit programs. In particular, partnerships are no longer solely limited to an Investment Tax Credit, but can now also elect a Production Tax Credit for solar energy production facilities placed in service after December 31, 2021.

Other notable tax law changes include the establishment of a new 15 percent AMT on adjusted financial statement income for large corporations and a one percent excise tax on net stock repurchases, both of which were effective for tax years beginning on or after January 1, 2023. The tax law changes for the new AMT permit business credits, including those from ESG investments in renewable energy and affordable housing, to offset potential AMT liability. The Corporation has assessed the potential impacts of these two U.S. tax law changes and does not expect the changes to have a significant effect on its future effective tax rate.

On June 10, 2021, the U.K. enacted the 2021 Finance Act, which increased the U.K. corporation income tax rate to 25 percent from 19 percent. This change is effective April 1, 2023 and unfavorably affects income tax expense on future U.K. earnings. As a result, during the three months ended June 30, 2021, the Corporation recorded a positive income tax adjustment of approximately $2.0 billion with a corresponding write-up of U.K. net deferred tax assets, which reflected a reversal of previously recorded write-downs of net deferred tax assets for prior changes in the U.K. corporation income tax rate.

Table 5 Selected Balance Sheet Data

(Dollars in millions)	December 31 2022	2021	$ Change	% Change
Assets				
Cash and cash equivalents	**$ 230,203**	$ 348,221	$ (118,018)	(34)%
Federal funds sold and securities borrowed or purchased under agreements to resell	**267,574**	250,720	16,854	7
Trading account assets	**296,108**	247,080	49,028	20
Debt securities	**862,819**	982,627	(119,808)	(12)
Loans and leases	**1,045,747**	979,124	66,623	7
Allowance for loan and lease losses	**(12,682)**	(12,387)	(295)	2
All other assets	**361,606**	374,110	(12,504)	(3)
Total assets	**$ 3,051,375**	$ 3,169,495	$ (118,120)	(4)
Liabilities				
Deposits	**$ 1,930,341**	$ 2,064,446	$ (134,105)	(6)
Federal funds purchased and securities loaned or sold under agreements to repurchase	**195,635**	192,329	3,306	2
Trading account liabilities	**80,399**	100,690	(20,291)	(20)
Short-term borrowings	**26,932**	23,753	3,179	13
Long-term debt	**275,982**	280,117	(4,135)	(1)
All other liabilities	**268,889**	238,094	30,795	13
Total liabilities	**2,778,178**	2,899,429	(121,251)	(4)
Shareholders' equity	**273,197**	270,066	3,131	1
Total liabilities and shareholders' equity	**$ 3,051,375**	$ 3,169,495	$ (118,120)	(4)

Assets

At December 31, 2022, total assets were approximately $3.1 trillion, down $118.1 billion from December 31, 2021. The decrease in assets was primarily due to lower debt securities and cash and cash equivalents, partially offset by an increase in loans and leases, trading account assets and federal funds sold and securities borrowed or purchased under agreements to resell.

Cash and Cash Equivalents

Cash and cash equivalents decreased $118.0 billion primarily driven by lower deposits and continued loan growth.

Federal Funds Sold and Securities Borrowed or Purchased Under Agreements to Resell

Federal funds transactions involve lending reserve balances on a short-term basis. Securities borrowed or purchased under agreements to resell are collateralized lending transactions utilized to accommodate customer transactions, earn interest rate spreads and obtain securities for settlement and for collateral. Federal funds sold and securities borrowed or purchased under agreements to resell increased $16.9 billion primarily due to client activity within *Global Markets*.

Trading Account Assets

Trading account assets consist primarily of long positions in equity and fixed-income securities including U.S. government and agency securities, corporate securities and non-U.S. sovereign debt. Trading account assets increased $49.0 billion primarily due to client activity within *Global Markets*.

Debt Securities

Debt securities primarily include U.S. Treasury and agency securities, mortgage-backed securities (MBS), principally agency MBS, non-U.S. bonds, corporate bonds and municipal debt. We use the debt securities portfolio primarily to manage interest rate and liquidity risk and to leverage market conditions that create economically attractive returns on these investments. Debt securities decreased $119.8 billion primarily driven by lower deposits and continued loan growth. For more information on debt securities, see *Note 4 – Securities* to the Consolidated Financial Statements.

Loans and Leases

Loans and leases increased $66.6 billion primarily driven by growth in commercial loans, higher credit card spending and higher residential mortgages due to lower paydowns and continued originations. For more information on the loan portfolio, see Credit Risk Management on page 59.

Allowance for Loan and Lease Losses

The allowance for loan and lease losses increased $295 million primarily driven by loan growth and a dampened macroeconomic outlook, partially offset by a reserve release for reduced pandemic uncertainties. For more information, see Allowance for Credit Losses on page 73.

All Other Assets

All other assets decreased $12.5 billion primarily driven by a decline in margin loans and loans held-for-sale (LHFS).

Liabilities

At December 31, 2022, total liabilities were approximately $2.8 trillion, down $121.3 billion from December 31, 2021, primarily due to lower deposits.

Deposits

Deposits decreased $134.1 billion primarily due to an increase in customer spending and a shift to higher yielding accounts.

Federal Funds Purchased and Securities Loaned or Sold Under Agreements to Repurchase

Federal funds transactions involve borrowing reserve balances on a short-term basis. Securities loaned or sold under agreements to repurchase are collateralized borrowing transactions utilized to accommodate customer transactions, earn interest rate spreads and finance assets on the balance sheet. Federal funds purchased and securities loaned or sold under agreements to repurchase increased $3.3 billion primarily driven by an increase in repurchase agreements to support liquidity.

Trading Account Liabilities

Trading account liabilities consist primarily of short positions in equity and fixed-income securities including U.S. Treasury and agency securities, non-U.S. sovereign debt and corporate securities. Trading account liabilities decreased $20.3 billion primarily due to lower levels of short positions within *Global Markets*.

Short-term Borrowings

Short-term borrowings provide an additional funding source and primarily consist of Federal Home Loan Bank (FHLB) short-term borrowings, notes payable and various other borrowings that generally have maturities of one year or less. Short-term borrowings increased $3.2 billion primarily due to an increase in FHLB advances and commercial paper to manage liquidity needs. For more information on short-term borrowings, see *Note 10 – Securities Financing Agreements, Short-term Borrowings, Collateral and Restricted Cash* to the Consolidated Financial Statements.

Long-term Debt

Long-term debt decreased $4.1 billion primarily due to maturities, redemptions and valuation adjustments, partially offset by issuances. For more information on long-term debt, see *Note 11 – Long-term Debt* to the Consolidated Financial Statements.

All Other Liabilities

All other liabilities increased $30.8 billion primarily driven by *Global Markets* client activity.

Shareholders' Equity

Shareholders' equity increased $3.1 billion primarily due to net income and the issuance of preferred stock, partially offset by market value decreases on derivatives and debt securities, and returns of capital to shareholders through common and preferred stock dividends and common stock repurchases.

Cash Flows Overview

The Corporation's operating assets and liabilities support our global markets and lending activities. We believe that cash flows from operations, available cash balances and our ability to generate cash through short- and long-term debt are sufficient to fund our operating liquidity needs. Our investing activities primarily include the debt securities portfolio and loans and leases. Our financing activities reflect cash flows primarily related to customer deposits, securities financing agreements, long-term debt and common and preferred stock. For more information on liquidity, see Liquidity Risk on page 54.

Supplemental Financial Data

Non-GAAP Financial Measures

In this Form 10-K, we present certain non-GAAP financial measures. Non-GAAP financial measures exclude certain items or otherwise include components that differ from the most directly comparable measures calculated in accordance with GAAP. Non-GAAP financial measures are provided as additional useful information to assess our financial condition, results of operations (including period-to-period operating performance) or compliance with prospective regulatory requirements. These non-GAAP financial measures are not intended as a substitute for GAAP financial measures and may not be defined or calculated the same way as non-GAAP financial measures used by other companies.

We view net interest income and related ratios and analyses on an FTE basis, which when presented on a consolidated basis are non-GAAP financial measures. To derive the FTE basis, net interest income is adjusted to reflect tax-exempt income on an equivalent before-tax basis with a corresponding increase in income tax expense. For purposes of this calculation, we use the federal statutory tax rate of 21 percent and a representative state tax rate. Net interest yield, which measures the basis points we earn over the cost of funds, utilizes net interest income on an FTE basis. We believe that presentation of these items on an FTE basis allows for comparison of amounts from both taxable and tax-exempt sources and is consistent with industry practices.

We may present certain key performance indicators and ratios excluding certain items (e.g., debit valuation adjustment (DVA) gains (losses)), which result in non-GAAP financial measures. We believe that the presentation of measures that exclude these items is useful because such measures provide additional information to assess the underlying operational performance and trends of our businesses and to allow better comparison of period-to-period operating performance.

We also evaluate our business based on certain ratios that utilize tangible equity, a non-GAAP financial measure. Tangible equity represents shareholders' equity or common shareholders' equity reduced by goodwill and intangible assets (excluding mortgage servicing rights (MSRs)), net of related deferred tax liabilities ("adjusted" shareholders' equity or common shareholders' equity). These measures are used to evaluate our use of equity. In addition, profitability, relationship and investment models use both return on average tangible common shareholders' equity and return on average tangible shareholders' equity as key measures to support our overall growth objectives. These ratios are:

- Return on average tangible common shareholders' equity measures our net income applicable to common shareholders as a percentage of adjusted average common shareholders' equity. The tangible common equity ratio represents adjusted ending common shareholders' equity divided by total tangible assets.
- Return on average tangible shareholders' equity measures our net income as a percentage of adjusted average total shareholders' equity. The tangible equity ratio represents adjusted ending shareholders' equity divided by total tangible assets.
- Tangible book value per common share represents adjusted ending common shareholders' equity divided by ending common shares outstanding.

We believe ratios utilizing tangible equity provide additional useful information because they present measures of those assets that can generate income. Tangible book value per common share provides additional useful information about the level of tangible assets in relation to outstanding shares of common stock.

The aforementioned supplemental data and performance measures are presented in Tables 6 and 7.

For more information on the reconciliation of these non-GAAP financial measures to the corresponding GAAP financial measures, see Non-GAAP Reconciliations on page 85.

Key Performance Indicators

We present certain key financial and nonfinancial performance indicators (key performance indicators) that management uses when assessing our consolidated and/or segment results. We believe they are useful to investors because they provide additional information about our underlying operational performance and trends. These key performance indicators (KPIs) may not be defined or calculated in the same way as similar KPIs used by other companies. For information on how these metrics are defined, see Key Metrics on page 167.

Our consolidated key performance indicators, which include various equity and credit metrics, are presented in Table 1 on page 28, Table 6 on page 33 and Table 7 on page 34.

For information on key segment performance metrics, see Business Segment Operations on page 37.

Table 6 Selected Annual Financial Data

(In millions, except per share information)	2022	2021	2020
Income statement			
Net interest income	**$ 52,462**	$ 42,934	$ 43,360
Noninterest income	**42,488**	46,179	42,168
Total revenue, net of interest expense	**94,950**	89,113	85,528
Provision for credit losses	**2,543**	(4,594)	11,320
Noninterest expense	**61,438**	59,731	55,213
Income before income taxes	**30,969**	33,976	18,995
Income tax expense	**3,441**	1,998	1,101
Net income	**27,528**	31,978	17,894
Net income applicable to common shareholders	**26,015**	30,557	16,473
Average common shares issued and outstanding	**8,113.7**	8,493.3	8,753.2
Average diluted common shares issued and outstanding	**8,167.5**	8,558.4	8,796.9
Performance ratios			
Return on average assets [1]	**0.88 %**	1.05 %	0.67 %
Return on average common shareholders' equity [1]	**10.75**	12.23	6.76
Return on average tangible common shareholders' equity [1, 2]	**15.15**	17.02	9.48
Return on average shareholders' equity [1]	**10.18**	11.68	6.69
Return on average tangible shareholders' equity [1, 2]	**13.76**	15.71	9.07
Total ending equity to total ending assets	**8.95**	8.52	9.68
Common equity ratio [1]	**8.02**	7.74	8.81
Total average equity to total average assets	**8.62**	9.02	9.96
Dividend payout [1]	**26.77**	21.51	38.18
Per common share data			
Earnings	**$ 3.21**	$ 3.60	$ 1.88
Diluted earnings	**3.19**	3.57	1.87
Dividends paid	**0.86**	0.78	0.72
Book value [1]	**30.61**	30.37	28.72
Tangible book value [2]	**21.83**	21.68	20.60
Market capitalization	**$ 264,853**	$ 359,383	$ 262,206
Average balance sheet			
Total loans and leases	**$ 1,016,782**	$ 920,401	$ 982,467
Total assets	**3,135,894**	3,034,623	2,683,122
Total deposits	**1,986,158**	1,914,286	1,632,998
Long-term debt	**246,479**	237,703	220,440
Common shareholders' equity	**241,981**	249,787	243,685
Total shareholders' equity	**270,299**	273,757	267,309
Asset quality			
Allowance for credit losses [3]	**$ 14,222**	$ 13,843	$ 20,680
Nonperforming loans, leases and foreclosed properties [4]	**3,978**	4,697	5,116
Allowance for loan and lease losses as a percentage of total loans and leases outstanding [4]	**1.22 %**	1.28 %	2.04 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases [4]	**333**	271	380
Net charge-offs	**$ 2,172**	$ 2,243	$ 4,121
Net charge-offs as a percentage of average loans and leases outstanding [4]	**0.21 %**	0.25 %	0.42 %
Capital ratios at year end [5]			
Common equity tier 1 capital	**11.2 %**	10.6 %	11.9 %
Tier 1 capital	**13.0**	12.1	13.5
Total capital	**14.9**	14.1	16.1
Tier 1 leverage	**7.0**	6.4	7.4
Supplementary leverage ratio	**5.9**	5.5	7.2
Tangible equity [2]	**6.8**	6.4	7.4
Tangible common equity [2]	**5.9**	5.7	6.5

(1) For definition, see Key Metrics on page 167.
(2) Tangible equity ratios and tangible book value per share of common stock are non-GAAP financial measures. For more information on these ratios and corresponding reconciliations to GAAP financial measures, see Supplemental Financial Data on page 32 and Non-GAAP Reconciliations on page 85.
(3) Includes the allowance for loan and leases losses and the reserve for unfunded lending commitments.
(4) Balances and ratios do not include loans accounted for under the fair value option. For additional exclusions from nonperforming loans, leases and foreclosed properties, see Consumer Portfolio Credit Risk Management – Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 63 and corresponding Table 27 and Commercial Portfolio Credit Risk Management – Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 68 and corresponding Table 34.
(5) For more information, including which approach is used to assess capital adequacy, see Capital Management on page 49.

Table 7 Selected Quarterly Financial Data

(In millions, except per share information)	2022 Quarters				2021 Quarters			
	Fourth	Third	Second	First	Fourth	Third	Second	First
Income statement								
Net interest income	**$ 14,681**	$ 13,765	$ 12,444	$ 11,572	$ 11,410	$ 11,094	$ 10,233	$ 10,197
Noninterest income	**9,851**	10,737	10,244	11,656	10,650	11,672	11,233	12,624
Total revenue, net of interest expense	**24,532**	24,502	22,688	23,228	22,060	22,766	21,466	22,821
Provision for credit losses	**1,092**	898	523	30	(489)	(624)	(1,621)	(1,860)
Noninterest expense	**15,543**	15,303	15,273	15,319	14,731	14,440	15,045	15,515
Income before income taxes	**7,897**	8,301	6,892	7,879	7,818	8,950	8,042	9,166
Income tax expense	**765**	1,219	645	812	805	1,259	(1,182)	1,116
Net income	**7,132**	7,082	6,247	7,067	7,013	7,691	9,224	8,050
Net income applicable to common shareholders	**6,904**	6,579	5,932	6,600	6,773	7,260	8,964	7,560
Average common shares issued and outstanding	**8,088.3**	8,107.7	8,121.6	8,136.8	8,226.5	8,430.7	8,620.8	8,700.1
Average diluted common shares issued and outstanding	**8,155.7**	8,160.8	8,163.1	8,202.1	8,304.7	8,492.8	8,735.5	8,755.6
Performance ratios								
Return on average assets [1]	**0.92 %**	0.90 %	0.79 %	0.89 %	0.88 %	0.99 %	1.23 %	1.13 %
Four-quarter trailing return on average assets [2]	**0.88**	0.87	0.89	0.99	1.05	1.04	0.97	0.79
Return on average common shareholders' equity [1]	**11.24**	10.79	9.93	11.02	10.90	11.43	14.33	12.28
Return on average tangible common shareholders' equity [3]	**15.79**	15.21	14.05	15.51	15.25	15.85	19.90	17.08
Return on average shareholders' equity [1]	**10.38**	10.37	9.34	10.64	10.27	11.08	13.47	11.91
Return on average tangible shareholders' equity [3]	**13.98**	13.99	12.66	14.40	13.87	14.87	18.11	16.01
Total ending equity to total ending assets	**8.95**	8.77	8.65	8.23	8.52	8.83	9.15	9.23
Common equity ratio [1]	**8.02**	7.82	7.71	7.40	7.74	8.07	8.37	8.41
Total average equity to total average assets	**8.87**	8.73	8.49	8.40	8.56	8.95	9.11	9.52
Dividend payout [1]	**25.71**	27.06	28.68	25.86	25.33	24.10	17.25	20.68
Per common share data								
Earnings	**$ 0.85**	$ 0.81	$ 0.73	$ 0.81	$ 0.82	$ 0.86	$ 1.04	$ 0.87
Diluted earnings	**0.85**	0.81	0.73	0.80	0.82	0.85	1.03	0.86
Dividends paid	**0.22**	0.22	0.21	0.21	0.21	0.21	0.18	0.18
Book value [1]	**30.61**	29.96	29.87	29.70	30.37	30.22	29.89	29.07
Tangible book value [3]	**21.83**	21.21	21.13	20.99	21.68	21.69	21.61	20.90
Market capitalization	**$ 264,853**	$ 242,338	$ 250,136	$ 332,320	$ 359,383	$ 349,841	$ 349,925	$ 332,337
Average balance sheet								
Total loans and leases	**$1,039,247**	$1,034,334	$1,014,886	$ 977,793	$ 945,062	$ 920,509	$ 907,900	$ 907,723
Total assets	**3,074,289**	3,105,546	3,157,885	3,207,702	3,164,118	3,076,452	3,015,113	2,879,221
Total deposits	**1,925,544**	1,962,775	2,012,079	2,045,811	2,017,223	1,942,705	1,888,834	1,805,747
Long-term debt	**243,871**	250,204	245,781	246,042	248,525	248,988	232,034	220,836
Common shareholders' equity	**243,647**	241,882	239,523	242,865	246,519	252,043	250,948	249,648
Total shareholders' equity	**272,629**	271,017	268,197	269,309	270,883	275,484	274,632	274,047
Asset quality								
Allowance for credit losses [4]	**$ 14,222**	$ 13,817	$ 13,434	$ 13,483	$ 13,843	$ 14,693	$ 15,782	$ 17,997
Nonperforming loans, leases and foreclosed properties [5]	**3,978**	4,156	4,326	4,778	4,697	4,831	5,031	5,299
Allowance for loan and lease losses as a percentage of total loans and leases outstanding [5]	**1.22 %**	1.20 %	1.17 %	1.23 %	1.28 %	1.43 %	1.55 %	1.80 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases [5]	**333**	309	288	262	271	279	287	313
Net charge-offs	**$ 689**	$ 520	$ 571	$ 392	$ 362	$ 463	$ 595	$ 823
Annualized net charge-offs as a percentage of average loans and leases outstanding [5]	**0.26 %**	0.20 %	0.23 %	0.16 %	0.15 %	0.20 %	0.27 %	0.37 %
Capital ratios at period end [6]								
Common equity tier 1 capital	**11.2 %**	11.0 %	10.5 %	10.4 %	10.6 %	11.1 %	11.5 %	11.8 %
Tier 1 capital	**13.0**	12.8	12.3	12.0	12.1	12.6	13.0	13.3
Total capital	**14.9**	14.7	14.2	14.0	14.1	14.7	15.1	15.6
Tier 1 leverage	**7.0**	6.8	6.5	6.3	6.4	6.6	6.9	7.2
Supplementary leverage ratio	**5.9**	5.8	5.5	5.4	5.5	5.6	5.9	7.0
Tangible equity [3]	**6.8**	6.6	6.5	6.2	6.4	6.7	7.0	7.0
Tangible common equity [3]	**5.9**	5.7	5.6	5.3	5.7	5.9	6.2	6.2
Total loss-absorbing capacity and long-term debt metrics								
Total loss-absorbing capacity to risk-weighted assets	**29.0 %**	28.9 %	27.8 %	27.2 %	26.9 %	27.7 %	27.7 %	26.8 %
Total loss-absorbing capacity to supplementary leverage exposure	**13.2**	13.0	12.6	12.2	12.1	12.4	12.5	14.1
Eligible long-term debt to risk-weighted assets	**15.2**	15.2	14.7	14.4	14.1	14.4	14.1	13.0
Eligible long-term debt to supplementary leverage exposure	**6.9**	6.8	6.6	6.5	6.3	6.4	6.3	6.8

[1] For definitions, see Key Metrics on page 167.
[2] Calculated as total net income for four consecutive quarters divided by annualized average assets for four consecutive quarters.
[3] Tangible equity ratios and tangible book value per share of common stock are non-GAAP financial measures. For more information on these ratios and corresponding reconciliations to GAAP financial measures, see Supplemental Financial Data on page 32 and Non-GAAP Reconciliations on page 85.
[4] Includes the allowance for loan and lease losses and the reserve for unfunded lending commitments.
[5] Balances and ratios do not include loans accounted for under the fair value option. For additional exclusions from nonperforming loans, leases and foreclosed properties, see Consumer Portfolio Credit Risk Management – Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 64 and corresponding Table 27 and Commercial Portfolio Credit Risk Management – Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 68 and corresponding Table 34.
[6] For more information, including which approach is used to assess capital adequacy, see Capital Management on page 49.

Table 8 Average Balances and Interest Rates - FTE Basis

(Dollars in millions)	Average Balance	Interest Income/ Expense [1]	Yield/ Rate	Average Balance	Interest Income/ Expense [1]	Yield/ Rate	Average Balance	Interest Income/ Expense [1]	Yield/ Rate
	2022			2021			2020		
Earning assets									
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	$ 195,564	$ 2,591	1.32 %	$ 255,595	$ 172	0.07 %	$ 253,227	$ 359	0.14 %
Time deposits placed and other short-term investments	9,209	132	1.44	7,603	15	0.19	8,840	29	0.33
Federal funds sold and securities borrowed or purchased under agreements to resell [2]	292,799	4,560	1.56	267,257	(90)	(0.03)	309,945	903	0.29
Trading account assets	158,102	5,586	3.53	147,891	3,823	2.58	148,076	4,185	2.83
Debt securities	922,730	17,207	1.86	905,169	12,433	1.38	532,266	9,868	1.87
Loans and leases [3]									
Residential mortgage	227,604	6,375	2.80	216,983	5,995	2.76	236,719	7,338	3.10
Home equity	27,364	959	3.50	31,014	1,066	3.44	38,251	1,290	3.37
Credit card	83,539	8,408	10.06	75,385	7,772	10.31	85,017	8,759	10.30
Direct/Indirect and other consumer	107,050	3,317	3.10	96,472	2,276	2.36	89,974	2,545	2.83
Total consumer	445,557	19,059	4.28	419,854	17,109	4.08	449,961	19,932	4.43
U.S. commercial	366,748	12,251	3.34	324,795	8,606	2.65	344,095	9,712	2.82
Non-U.S. commercial	125,222	3,702	2.96	99,584	1,752	1.76	106,487	2,208	2.07
Commercial real estate [4]	65,421	2,595	3.97	60,303	1,496	2.48	63,428	1,790	2.82
Commercial lease financing	13,834	473	3.42	15,865	462	2.91	18,496	559	3.02
Total commercial	571,225	19,021	3.33	500,547	12,316	2.46	532,506	14,269	2.68
Total loans and leases	1,016,782	38,080	3.75	920,401	29,425	3.20	982,467	34,201	3.48
Other earning assets	105,674	4,847	4.59	112,512	2,321	2.06	83,078	2,539	3.06
Total earning assets	2,700,860	73,003	2.70	2,616,428	48,099	1.84	2,317,899	52,084	2.25
Cash and due from banks	28,029			31,214			31,885		
Other assets, less allowance for loan and lease losses	407,005			386,981			333,338		
Total assets	$ 3,135,894			$ 3,034,623			$ 2,683,122		
Interest-bearing liabilities									
U.S. interest-bearing deposits									
Demand and money market deposits	$ 987,247	$ 3,145	0.32 %	$ 925,970	$ 314	0.03 %	$ 829,719	$ 977	0.12 %
Time and savings deposits	166,490	818	0.49	161,512	170	0.11	170,750	734	0.43
Total U.S. interest-bearing deposits	1,153,737	3,963	0.34	1,087,482	484	0.04	1,000,469	1,711	0.17
Non-U.S. interest-bearing deposits	80,951	755	0.93	82,769	53	0.06	77,046	232	0.30
Total interest-bearing deposits	1,234,688	4,718	0.38	1,170,251	537	0.05	1,077,515	1,943	0.18
Federal funds purchased and securities loaned or sold under agreements to repurchase	214,369	4,117	1.92	210,848	461	0.22	188,511	1,229	0.65
Short-term borrowings and other interest-bearing liabilities [2]	137,277	2,861	2.08	106,975	(819)	(0.77)	104,955	(242)	(0.23)
Trading account liabilities	51,208	1,538	3.00	54,107	1,128	2.08	41,386	974	2.35
Long-term debt	246,479	6,869	2.79	237,703	3,431	1.44	220,440	4,321	1.96
Total interest-bearing liabilities	1,884,021	20,103	1.07	1,779,884	4,738	0.27	1,632,807	8,225	0.50
Noninterest-bearing sources									
Noninterest-bearing deposits	751,470			744,035			555,483		
Other liabilities [5]	230,104			236,947			227,523		
Shareholders' equity	270,299			273,757			267,309		
Total liabilities and shareholders' equity	$ 3,135,894			$ 3,034,623			$ 2,683,122		
Net interest spread			1.63 %			1.57 %			1.75 %
Impact of noninterest-bearing sources			0.33			0.09			0.15
Net interest income/yield on earning assets [6]		$ 52,900	1.96 %		$ 43,361	1.66 %		$ 43,859	1.90 %

(1) Includes the impact of interest rate risk management contracts. For more information, see Interest Rate Risk Management for the Banking Book on page 79.
(2) For more information on negative interest, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.
(3) Nonperforming loans are included in the respective average loan balances. Income on these nonperforming loans is generally recognized on a cost recovery basis.
(4) Includes U.S. commercial real estate loans of $61.1 billion, $56.5 billion and $59.8 billion, and non-U.S. commercial real estate loans of $4.3 billion, $3.8 billion and $3.6 billion for 2022, 2021 and 2020, respectively.
(5) Includes $30.7 billion, $30.4 billion and $34.3 billion of structured notes and liabilities for 2022, 2021 and 2020, respectively.
(6) Net interest income includes FTE adjustments of $438 million, $427 million and $499 million for 2022, 2021 and 2020, respectively.

Table 9 Analysis of Changes in Net Interest Income - FTE Basis

(Dollars in millions)	Due to Change in [1] Volume	Rate	Net Change	Due to Change in [1] Volume	Rate	Net Change
	From 2021 to 2022			From 2020 to 2021		
Increase (decrease) in interest income						
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	**$ (35)**	**$ 2,454**	**$ 2,419**	$ (1)	$ (186)	$ (187)
Time deposits placed and other short-term investments	**2**	**115**	**117**	(4)	(10)	(14)
Federal funds sold and securities borrowed or purchased under agreements to resell	**2**	**4,648**	**4,650**	(128)	(865)	(993)
Trading account assets	**256**	**1,507**	**1,763**	—	(362)	(362)
Debt securities	**301**	**4,473**	**4,774**	7,059	(4,494)	2,565
Loans and leases						
Residential mortgage	**287**	**93**	**380**	(612)	(731)	(1,343)
Home equity	**(125)**	**18**	**(107)**	(245)	21	(224)
Credit card	**841**	**(205)**	**636**	(994)	7	(987)
Direct/Indirect and other consumer	**250**	**791**	**1,041**	185	(454)	(269)
Total consumer			**1,950**			(2,823)
U.S. commercial	**1,113**	**2,532**	**3,645**	(553)	(553)	(1,106)
Non-U.S. commercial	**452**	**1,498**	**1,950**	(147)	(309)	(456)
Commercial real estate	**126**	**973**	**1,099**	(89)	(205)	(294)
Commercial lease financing	**(59)**	**70**	**11**	(80)	(17)	(97)
Total commercial			**6,705**			(1,953)
Total loans and leases			**8,655**			(4,776)
Other earning assets	**(144)**	**2,670**	**2,526**	904	(1,122)	(218)
Net increase (decrease) in interest income			**$ 24,904**			$ (3,985)
Increase (decrease) in interest expense						
U.S. interest-bearing deposits						
Demand and money market deposits	**$ (18)**	**$ 2,849**	**$ 2,831**	$ 134	$ (797)	$ (663)
Time and savings deposits	**13**	**635**	**648**	(39)	(525)	(564)
Total U.S. interest-bearing deposits			**3,479**			(1,227)
Non-U.S. interest-bearing deposits	**(4)**	**706**	**702**	16	(195)	(179)
Total interest-bearing deposits			**4,181**			(1,406)
Federal funds purchased and securities loaned or sold under agreements to repurchase	**11**	**3,645**	**3,656**	142	(910)	(768)
Short-term borrowings and other interest-bearing liabilities	**(238)**	**3,918**	**3,680**	(4)	(573)	(577)
Trading account liabilities	**(63)**	**473**	**410**	298	(144)	154
Long-term debt	**118**	**3,320**	**3,438**	338	(1,228)	(890)
Net increase (decrease) in interest expense			**15,365**			(3,487)
Net increase (decrease) in net interest income [2]			**$ 9,539**			$ (498)

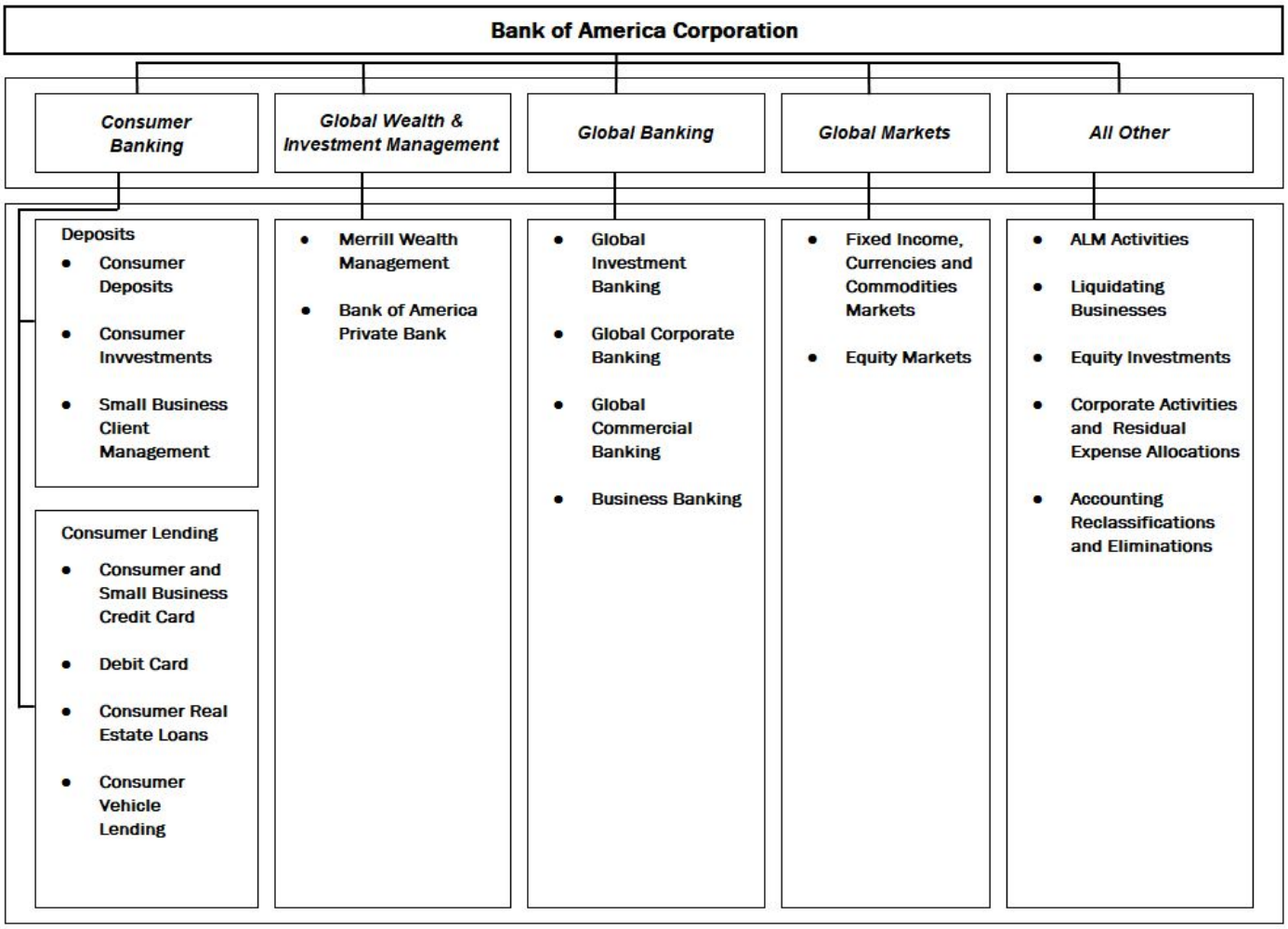
[1] The changes for each category of interest income and expense are divided between the portion of change attributable to the variance in volume and the portion of change attributable to the variance in rate for that category. The unallocated change in rate or volume variance is allocated between the rate and volume variances.

[2] Includes an increase (decrease) in FTE basis adjustments of $11 million from 2021 to 2022 and $(72) million from 2020 to 2021.

Business Segment Operations

Segment Description and Basis of Presentation

We report our results of operations through the following four business segments: *Consumer Banking, GWIM, Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*. We manage our segments and report their results on an FTE basis. The primary activities, products and businesses of the business segments and *All Other* are shown below.



We periodically review capital allocated to our businesses and allocate capital annually during the strategic and capital planning processes. We utilize a methodology that considers the effect of regulatory capital requirements in addition to internal risk-based capital models. Our internal risk-based capital models use a risk-adjusted methodology incorporating each segment's credit, market, interest rate, business and operational risk components. For more information on the nature of these risks, see Managing Risk on page 46. The capital allocated to the business segments is referred to as allocated capital. Allocated equity in the reporting units is comprised of allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the reporting unit. For more information, including the definition of a reporting unit, see *Note 7 – Goodwill and Intangible Assets* to the Consolidated Financial Statements.

For more information on our presentation of financial information on an FTE basis, see Supplemental Financial Data on page 32, and for reconciliations to consolidated total revenue, net income and year-end total assets, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Key Performance Indicators

We present certain key financial and nonfinancial performance indicators that management uses when evaluating segment results. We believe they are useful to investors because they provide additional information about our segments' operational performance, customer trends and business growth.

Consumer Banking

(Dollars in millions)	Deposits 2022	Deposits 2021	Consumer Lending 2022	Consumer Lending 2021	Total Consumer Banking 2022	Total Consumer Banking 2021	% Change
Net interest income	**$ 19,254**	$ 14,358	**$ 10,791**	$ 10,571	**$ 30,045**	$ 24,929	21 %
Noninterest income:							
Card income	**(36)**	(28)	**5,205**	5,200	**5,169**	5,172	—
Service charges	**2,703**	3,535	**3**	3	**2,706**	3,538	(24)
All other income	**478**	223	**237**	143	**715**	366	95
Total noninterest income	**3,145**	3,730	**5,445**	5,346	**8,590**	9,076	(5)
Total revenue, net of interest expense	**22,399**	18,088	**16,236**	15,917	**38,635**	34,005	14
Provision for credit losses	**564**	240	**1,416**	(1,275)	**1,980**	(1,035)	n/m
Noninterest expense	**12,393**	11,650	**7,684**	7,640	**20,077**	19,290	4
Income before income taxes	**9,442**	6,198	**7,136**	9,552	**16,578**	15,750	5
Income tax expense	**2,314**	1,519	**1,748**	2,340	**4,062**	3,859	5
Net income	**$ 7,128**	$ 4,679	**$ 5,388**	$ 7,212	**$ 12,516**	$ 11,891	5
Effective tax rate [1]					**24.5 %**	24.5 %	
Net interest yield	**1.82 %**	1.48 %	**3.72 %**	3.77 %	**2.73 %**	2.45 %	
Return on average allocated capital	**55**	39	**20**	27	**31**	31	
Efficiency ratio	**55.33**	64.41	**47.32**	48.00	**51.96**	56.73	
Balance Sheet							
Average							
Total loans and leases	**$ 4,161**	$ 4,431	**$ 288,205**	$ 279,630	**$ 292,366**	$ 284,061	3 %
Total earning assets [2]	**1,057,531**	973,018	**289,719**	280,080	**1,099,410**	1,016,751	8
Total assets [2]	**1,090,692**	1,009,387	**296,499**	285,532	**1,139,351**	1,058,572	8
Total deposits	**1,056,783**	976,093	**5,778**	6,934	**1,062,561**	983,027	8
Allocated capital	**13,000**	12,000	**27,000**	26,500	**40,000**	38,500	4
Year End							
Total loans and leases	**$ 4,148**	$ 4,206	**$ 300,613**	$ 282,305	**$ 304,761**	$ 286,511	6 %
Total earning assets [2]	**1,043,049**	1,048,009	**300,787**	282,850	**1,085,079**	1,090,331	—
Total assets [2]	**1,077,203**	1,082,449	**308,007**	289,220	**1,126,453**	1,131,142	—
Total deposits	**1,043,194**	1,049,085	**5,605**	5,910	**1,048,799**	1,054,995	(1)

[1] Estimated at the segment level only.
[2] In segments and businesses where the total of liabilities and equity exceeds assets, we allocate assets from *All Other* to match the segments' and businesses' liabilities and allocated shareholders' equity. As a result, total earning assets and total assets of the businesses may not equal total *Consumer Banking*.
n/m = not meaningful

Consumer Banking, comprised of Deposits and Consumer Lending, offers a diversified range of credit, banking and investment products and services to consumers and small businesses. Deposits and Consumer Lending include the net impact of migrating customers and their related deposit, brokerage asset and loan balances between Deposits, Consumer Lending and *GWIM*, as well as other client-managed businesses. Our customers and clients have access to a coast-to-coast network including financial centers in 38 states and the District of Columbia. As of December 31, 2022, our network includes approximately 3,900 financial centers, approximately 16,000 ATMs, nationwide call centers and leading digital banking platforms with more than 44 million active users, including approximately 35 million active mobile users.

Consumer Banking Results

Net income for *Consumer Banking* increased $625 million to $12.5 billion due to higher revenue, partially offset by an increase in provision for credit losses and higher noninterest expense. Net interest income increased $5.1 billion to $30.0 billion primarily driven by higher interest rates and the benefits of higher deposit and loan balances, partially offset by a lower amount of accelerated net capitalized loan fees due to PPP loan forgiveness, which primarily occurred in 2021. Noninterest income decreased $486 million to $8.6 billion primarily driven by the impact of non-sufficient funds and overdraft policy changes, partially offset by a gain on the sale of an affinity card loan portfolio in the fourth quarter of 2022.

The provision for credit losses increased $3.0 billion to $2.0 billion primarily driven by loan growth and a dampened macroeconomic outlook in 2022, compared to a benefit in 2021 due to an improved macroeconomic outlook. Noninterest expense increased $787 million to $20.1 billion primarily driven by continued investments for business growth, including marketing, technology and people, as well as increased client activity, partially offset by an impairment charge for real estate rationalization and the contribution to the Bank of America Foundation in the prior year.

The return on average allocated capital was 31 percent, unchanged from 2021. For more information on capital allocated to the business segments, see Business Segment Operations on page 37.

Deposits

Deposits includes the results of consumer deposit activities that consist of a comprehensive range of products provided to consumers and small businesses. Our deposit products include noninterest- and interest-bearing checking accounts, money market savings accounts, traditional savings accounts, CDs and IRAs, as well as investment accounts and products. Net interest income is allocated to deposit products using our funds transfer pricing process that matches assets and liabilities with similar interest rate sensitivity and maturity characteristics. Deposits generates fees such as account service fees and ATM fees, as well as investment and brokerage fees from Consumer Investment accounts. Consumer Investments serves investment client relationships through the Merrill Edge integrated investing and banking service platform, providing investment advice and guidance, client brokerage asset services, self-directed online investing and key banking capabilities including access to the

Corporation's network of financial centers and ATMs.

Net income for Deposits increased $2.4 billion to $7.1 billion due to higher revenue, partially offset by higher noninterest expense and an increase in provision for credit losses. Net interest income increased $4.9 billion to $19.3 billion primarily due to higher interest rates and the benefit of higher deposit balances. Noninterest income decreased $585 million to $3.1 billion primarily driven by the impact of non-sufficient funds and overdraft policy changes, partially offset by higher other service charges due to increased client activity.

The provision for credit losses increased $324 million to $564 million primarily driven by increased overdraft losses due to higher payment activity related to checking accounts. The benefit in the prior year was due to an improved macroeconomic outlook. Noninterest expense increased $743 million to $12.4 billion primarily driven by continued investments for business growth and increased client activity, partially offset by an impairment charge for real estate rationalization in the prior year.

Average deposits increased $80.7 billion to $1.1 trillion primarily due to net inflows of $46.8 billion in checking and $34.9 billion in money market savings largely driven by strong organic growth.

The table below provides key performance indicators for Deposits. Management uses these metrics, and we believe they are useful to investors because they provide additional information to evaluate our deposit profitability and digital/mobile trends.

Key Statistics – Deposits

	2022	2021
Total deposit spreads (excludes noninterest costs) [1]	**1.86%**	1.69%
Year End		
Consumer investment assets (in millions) [2]	**$319,648**	$368,831
Active digital banking users (in thousands) [3]	**44,054**	41,365
Active mobile banking users (in thousands) [4]	**35,452**	32,980
Financial centers	**3,913**	4,173
ATMs	**15,528**	16,209

[1] Includes deposits held in Consumer Lending.
[2] Includes client brokerage assets, deposit sweep balances and AUM in *Consumer Banking*.
[3] Represents mobile and/or online active users over the past 90 days.
[4] Represents mobile active users over the past 90 days.

Consumer investment assets decreased $49.2 billion to $319.6 billion driven by market performance, partially offset by client flows. Active mobile banking users increased approximately two million, reflecting continuing changes in our clients' banking preferences. We had a net decrease of 260 financial centers and 681 ATMs as we continue to optimize our consumer banking network.

Consumer Lending

Consumer Lending offers products to consumers and small businesses across the U.S. The products offered include debit and credit cards, residential mortgages and home equity loans, and direct and indirect loans such as automotive, recreational vehicle and consumer personal loans. In addition to earning net interest spread revenue on its lending activities, Consumer Lending generates interchange revenue from debit and credit card transactions, late fees, cash advance fees, annual credit card fees, mortgage banking fee income and other miscellaneous fees. Consumer Lending products are available to our customers through our retail network, direct telephone, and online and mobile channels. Consumer Lending results also include the impact of servicing residential mortgages and home equity loans, including loans held on the balance sheet of Consumer Lending and loans serviced for others.

Net income for Consumer Lending decreased $1.8 billion to $5.4 billion primarily due to an increase in provision for credit losses. Net interest income increased $220 million to $10.8 billion primarily due to higher interest rates and loan balances, largely offset by a lower amount of accelerated net capitalized loan fees due to PPP loan forgiveness, which primarily occurred in 2021. Noninterest income increased $99 million to $5.4 billion primarily driven by a gain on the sale of an affinity card loan portfolio in the fourth quarter of 2022.

The provision for credit losses increased $2.7 billion to $1.4 billion primarily driven by loan growth and a dampened macroeconomic environment in 2022 compared to a benefit in 2021 due to an improved macroeconomic outlook. Noninterest expense increased $44 million to $7.7 billion largely driven by continued investments for business growth and increased client activity, partially offset by the contribution to the Bank of America Foundation in the prior year.

Average loans increased $8.6 billion to $288.2 billion primarily driven by an increase in credit card loans and first mortgage loans, partially offset by a decline in PPP loans.

The table below provides key performance indicators for Consumer Lending. Management uses these metrics, and we believe they are useful to investors because they provide additional information about loan growth and profitability.

Key Statistics – Consumer Lending

(Dollars in millions)	2022	2021
Total credit card [1]		
Gross interest yield [2]	**10.42 %**	10.17 %
Risk-adjusted margin [3]	**10.06**	10.17
New accounts (in thousands)	**4,397**	3,594
Purchase volumes	**$356,588**	$311,571
Debit card purchase volumes	**$503,583**	$473,770

[1] Includes *GWIM*'s credit card portfolio.
[2] Calculated as the effective annual percentage rate divided by average loans.
[3] Calculated as the difference between total revenue, net of interest expense, and net credit losses divided by average loans.

During 2022, the total risk-adjusted margin decreased 11 bps primarily driven by lower net interest margin and lower fee income, partially offset by lower net credit losses. Total credit card purchase volumes increased $45.0 billion to $356.6 billion and debit card purchase volumes increased $29.8 billion to $503.6 billion, reflecting higher levels of consumer spending.

Key Statistics – Loan Production [1]

(Dollars in millions)	2022	2021
Consumer Banking:		
First mortgage	**$ 20,981**	$ 45,976
Home equity	**7,988**	3,996
Total [2]:		
First mortgage	**$ 44,765**	$ 79,692
Home equity	**9,591**	4,895

[1] The loan production amounts represent the unpaid principal balance of loans and, in the case of home equity, the principal amount of the total line of credit.
[2] In addition to loan production in *Consumer Banking*, there is also first mortgage and home equity loan production in *GWIM*.

First mortgage loan originations for *Consumer Banking* and the total Corporation decreased $25.0 billion and $34.9 billion during 2022 primarily driven by changes in demand.

Home equity production in *Consumer Banking* and the total Corporation increased $4.0 billion and $4.7 billion during 2022 primarily driven by higher demand.

Global Wealth & Investment Management

(Dollars in millions)	2022	2021	% Change
Net interest income	**$ 7,466**	$ 5,664	32 %
Noninterest income:			
Investment and brokerage services	**13,561**	14,312	(5)
All other income	**721**	772	(7)
Total noninterest income	**14,282**	15,084	(5)
Total revenue, net of interest expense	**21,748**	20,748	5
Provision for credit losses	**66**	(241)	(127)
Noninterest expense	**15,490**	15,258	2
Income before income taxes	**6,192**	5,731	8
Income tax expense	**1,517**	1,404	8
Net income	**$ 4,675**	$ 4,327	8
Effective tax rate	**24.5 %**	24.5 %	
Net interest yield	**1.95**	1.51	
Return on average allocated capital	**27**	26	
Efficiency ratio	**71.23**	73.54	
Balance Sheet			
Average			
Total loans and leases	**$ 219,810**	$ 196,899	12 %
Total earning assets	**383,352**	374,273	2
Total assets	**396,167**	386,918	2
Total deposits	**351,329**	340,124	3
Allocated capital	**17,500**	16,500	6
Year end			
Total loans and leases	**$ 223,910**	$ 208,971	7
Total earning assets	**355,461**	425,112	(16)
Total assets	**368,893**	438,275	(16)
Total deposits	**323,899**	390,143	(17)

GWIM consists of two primary businesses: Merrill Wealth Management and Bank of America Private Bank.

Merrill Wealth Management's advisory business provides a high-touch client experience through a network of financial advisors focused on clients with over $250,000 in total investable assets. Merrill Wealth Management provides tailored solutions to meet clients' needs through a full set of investment management, brokerage, banking and retirement products.

Bank of America Private Bank, together with Merrill Wealth Management's Private Wealth Management business, provides comprehensive wealth management solutions targeted to high net worth and ultra high net worth clients, as well as customized solutions to meet clients' wealth structuring, investment management, trust and banking needs, including specialty asset management services.

Net income for *GWIM* increased $348 million to $4.7 billion driven by higher revenue, partially offset by higher provision for credit losses and noninterest expense. The operating margin remained unchanged at 28 percent compared to a year ago.

Net interest income increased $1.8 billion to $7.5 billion due to the impacts of higher interest rates, as well as the benefits of higher loan and deposit balances.

Noninterest income, which primarily includes investment and brokerage services income, decreased $802 million to $14.3 billion primarily due to the impacts of lower market valuations and declines in AUM pricing, partially offset by the impact of positive AUM flows.

The provision for credit losses increased $307 million primarily due to a dampened macroeconomic outlook and loan growth in the current-year period, compared to a benefit in the prior-year period due to an improved macroeconomic outlook. Noninterest expense increased $232 million to $15.5 billion primarily due to continued investments in the business, partially offset by lower revenue-related incentives.

The return on average allocated capital was 27 percent, up from 26 percent, due to higher net income, partially offset by an increase in allocated capital. For more information on capital allocated to the business segments, see Business Segment Operations on page 37.

Average loans increased $22.9 billion to $219.8 billion primarily due to residential mortgage, securities-based lending and custom lending. Average deposits increased $11.2 billion to $351.3 billion primarily driven by inflows from new and existing accounts.

Merrill Wealth Management revenue of $18.1 billion increased four percent primarily driven by the benefits of higher interest rates, as well as higher deposit and loan balances, partially offset by the impact of lower market valuations and declines in AUM pricing.

Bank of America Private Bank revenue of $3.6 billion increased nine percent primarily driven by the benefits of higher interest rates, as well as higher deposit and loan balances, partially offset by the impact of lower market valuations.

Key Indicators and Metrics

(Dollars in millions)	2022	2021
Revenue by Business		
Merrill Wealth Management	**$ 18,135**	$ 17,448
Bank of America Private Bank	**3,613**	3,300
Total revenue, net of interest expense	**$ 21,748**	$ 20,748
Client Balances by Business, at year end		
Merrill Wealth Management	**$ 2,822,910**	$ 3,214,881
Bank of America Private Bank	**563,931**	625,453
Total client balances	**$ 3,386,841**	$ 3,840,334
Client Balances by Type, at year end		
Assets under management	**$ 1,401,474**	$ 1,638,782
Brokerage and other assets	**1,482,025**	1,655,021
Deposits	**323,899**	390,143
Loans and leases [1]	**226,973**	212,251
Less: Managed deposits in assets under management	**(47,530)**	(55,863)
Total client balances	**$ 3,386,841**	$ 3,840,334
Assets Under Management Rollforward		
Assets under management, beginning of year	**$ 1,638,782**	$ 1,408,465
Net client flows	**20,785**	66,250
Market valuation/other	**(258,093)**	164,067
Total assets under management, end of year	**$ 1,401,474**	$ 1,638,782
Total wealth advisors, at year end [2]	**19,273**	18,846

[1] Includes margin receivables which are classified in customer and other receivables on the Consolidated Balance Sheet.
[2] Includes advisors across all wealth management businesses in *GWIM* and *Consumer Banking*.

Client Balances

Client balances managed under advisory and/or discretion of GWIM are AUM and are typically held in diversified portfolios. Fees earned on AUM are calculated as a percentage of clients' AUM balances. The asset management fees charged to clients per year depend on various factors but are commonly driven by the breadth of the client's relationship. The net client AUM flows represent the net change in clients' AUM balances over a specified period of time, excluding market appreciation/depreciation and other adjustments.

Client balances decreased $453.5 billion, or 12 percent, to $3.4 trillion at December 31, 2022 compared to December 31, 2021. The decrease in client balances was primarily due to the impact of lower market valuations, partially offset by positive client flows.

Global Banking

(Dollars in millions)	2022	2021	% Change
Net interest income	**$ 12,184**	$ 8,511	43 %
Noninterest income:			
Service charges	**3,293**	3,523	(7)
Investment banking fees	**3,004**	5,107	(41)
All other income	**3,748**	3,734	—
Total noninterest income	**10,045**	12,364	(19)
Total revenue, net of interest expense	**22,229**	20,875	6
Provision for credit losses	**641**	(3,201)	(120)
Noninterest expense	**10,966**	10,632	3
Income before income taxes	**10,622**	13,444	(21)
Income tax expense	**2,815**	3,630	(22)
Net income	**$ 7,807**	$ 9,814	(20)
Effective tax rate	**26.5 %**	27.0 %	
Net interest yield	**2.26**	1.55	
Return on average allocated capital	**18**	23	
Efficiency ratio	**49.34**	50.93	
Balance Sheet			
Average			
Total loans and leases	**$ 375,271**	$ 329,655	14 %
Total earning assets	**539,032**	549,749	(2)
Total assets	**603,273**	611,304	(1)
Total deposits	**511,804**	522,790	(2)
Allocated capital	**44,500**	42,500	5
Year end			
Total loans and leases	**$ 379,107**	$ 352,933	7 %
Total earning assets	**522,539**	574,583	(9)
Total assets	**588,466**	638,131	(8)
Total deposits	**498,661**	551,752	(10)

Global Banking, which includes Global Corporate Banking, Global Commercial Banking, Business Banking and Global Investment Banking, provides a wide range of lending-related products and services, integrated working capital management and treasury solutions, and underwriting and advisory services through our network of offices and client relationship teams. Our lending products and services include commercial loans, leases, commitment facilities, trade finance, commercial real estate lending and asset-based lending. Our treasury solutions business includes treasury management, foreign exchange, short-term investing options and merchant services. We also provide investment banking services to our clients such as debt and equity underwriting and distribution, and merger-related and other advisory services. Underwriting debt and equity issuances, fixed-income and equity research, and certain market-based activities are executed through our global broker-dealer affiliates, which are our primary dealers in several countries. Within *Global Banking*, Global Corporate Banking clients generally include large global corporations, financial institutions and leasing clients. Global Commercial Banking clients generally include middle-market companies, commercial real estate firms and not-for-profit companies. Business Banking clients include mid-sized U.S.-based businesses requiring customized and integrated financial advice and solutions.

Net income for *Global Banking* decreased $2.0 billion to $7.8 billion driven by higher provision for credit losses and noninterest expense, partially offset by higher revenue.

Net interest income increased $3.7 billion to $12.2 billion primarily due to the benefits of higher interest rates and loan balances.

Noninterest income decreased $2.3 billion to $10.0 billion driven by lower investment banking fees and valuation adjustments on leveraged loans, as well as lower treasury service charges.

The provision for credit losses increased $3.8 billion to $641 million primarily driven by a dampened macroeconomic outlook and loan growth, compared to a benefit in the prior year due to an improved macroeconomic outlook.

Noninterest expense increased $334 million to $11.0 billion, primarily due to continued investments in the business, including strategic hiring and technology.

The return on average allocated capital was 18 percent, down from 23 percent, due to lower net income and higher allocated capital. For more information on capital allocated to the business segments, see Business Segment Operations on page 37.

Global Corporate, Global Commercial and Business Banking

Global Corporate, Global Commercial and Business Banking each include Business Lending and Global Transaction Services activities. Business Lending includes various lending-related products and services, and related hedging activities, including commercial loans, leases, commitment facilities, trade finance, real estate lending and asset-based lending. Global Transaction Services includes deposits, treasury management, credit card, foreign exchange and short-term investment products.

The following table and discussion present a summary of the results, which exclude certain investment banking and PPP activities in *Global Banking*.

Global Corporate, Global Commercial and Business Banking

(Dollars in millions)	Global Corporate Banking 2022	Global Corporate Banking 2021	Global Commercial Banking 2022	Global Commercial Banking 2021	Business Banking 2022	Business Banking 2021	Total 2022	Total 2021
Revenue								
Business Lending	**$ 4,325**	$ 3,723	**$ 4,316**	$ 3,675	**$ 251**	$ 224	**$ 8,892**	$ 7,622
Global Transaction Services [1]	**5,002**	3,235	**4,166**	3,341	**1,213**	941	**10,381**	7,517
Total revenue, net of interest expense	**$ 9,327**	$ 6,958	**$ 8,482**	$ 7,016	**$ 1,464**	$ 1,165	**$ 19,273**	$ 15,139
Balance Sheet								
Average								
Total loans and leases	**$ 174,052**	$ 150,159	**$ 187,597**	$ 161,012	**$ 12,743**	$ 12,763	**$ 374,392**	$ 323,934
Total deposits [1]	**250,648**	252,403	**204,893**	213,999	**56,263**	56,354	**511,804**	522,756
Year end								
Total loans and leases	**$ 174,905**	$ 163,027	**$ 191,051**	$ 175,228	**$ 12,683**	$ 12,822	**$ 378,639**	$ 351,077
Total deposits [1]	**262,033**	260,826	**186,112**	233,007	**50,516**	57,886	**498,661**	551,719

[1] Prior periods have been revised to conform to current-period presentation.

Business Lending revenue increased $1.3 billion in 2022 compared to 2021 primarily due to the benefits of higher interest rates and loan balances.

Global Transaction Services revenue increased $2.9 billion in 2022 compared to 2021 driven by higher interest rates, partially offset by lower treasury service charges.

Average loans and leases increased 16 percent in 2022 compared to 2021 due to higher client demand. Average deposits decreased two percent due to declines in domestic balances.

Global Investment Banking

Client teams and product specialists underwrite and distribute debt, equity and loan products, and provide advisory services and tailored risk management solutions. The economics of certain investment banking and underwriting activities are shared primarily between *Global Banking* and *Global Markets* under an internal revenue-sharing arrangement. *Global Banking* originates certain deal-related transactions with our corporate and commercial clients that are executed and distributed by *Global Markets*. To provide a complete discussion of our consolidated investment banking fees, the table below presents total Corporation investment banking fees and the portion attributable to *Global Banking*.

Investment Banking Fees

(Dollars in millions)	Global Banking 2022	Global Banking 2021	Total Corporation 2022	Total Corporation 2021
Products				
Advisory	**$ 1,643**	$ 2,139	**$ 1,783**	$ 2,311
Debt issuance	**1,099**	1,736	**2,523**	4,015
Equity issuance	**262**	1,232	**709**	2,784
Gross investment banking fees	**3,004**	5,107	**5,015**	9,110
Self-led deals	**(78)**	(93)	**(192)**	(223)
Total investment banking fees	**$ 2,926**	$ 5,014	**$ 4,823**	$ 8,887

Total Corporation investment banking fees, which exclude self-led deals and are primarily included within *Global Banking* and *Global Markets,* decreased 46 percent to $4.8 billion primarily due to lower equity issuance, debt issuance and advisory fees.

Global Markets

(Dollars in millions)	2022	2021	% Change
Net interest income	$ 3,088	$ 4,011	(23)%
Noninterest income:			
Investment and brokerage services	2,002	1,979	1
Investment banking fees	1,820	3,616	(50)
Market making and similar activities	11,406	8,760	30
All other income	(178)	889	(120)
Total noninterest income	15,050	15,244	(1)
Total revenue, net of interest expense	18,138	19,255	(6)
Provision for credit losses	28	65	(57)
Noninterest expense	12,420	13,032	(5)
Income before income taxes	5,690	6,158	(8)
Income tax expense	1,508	1,601	(6)
Net income	$ 4,182	$ 4,557	(8)
Effective tax rate	26.5 %	26.0 %	
Return on average allocated capital	10	12	
Efficiency ratio	68.48	67.68	
Balance Sheet			
Average			
Trading-related assets:			
Trading account securities	$ 303,587	$ 291,505	4 %
Reverse repurchases	126,324	113,989	11
Securities borrowed	116,764	100,292	16
Derivative assets	54,128	43,582	24
Total trading-related assets	600,803	549,368	9
Total loans and leases	116,652	91,339	28
Total earning assets	602,889	541,391	11
Total assets	857,637	785,998	9
Total deposits	40,382	51,833	(22)
Allocated capital	42,500	38,000	12
Year end			
Total trading-related assets	$ 564,769	$ 491,160	15 %
Total loans and leases	127,735	114,846	11
Total earning assets	587,772	561,135	5
Total assets	812,489	747,794	9
Total deposits	39,077	46,374	(16)

Global Markets offers sales and trading services and research services to institutional clients across fixed-income, credit, currency, commodity and equity businesses. *Global Markets* product coverage includes securities and derivative products in both the primary and secondary markets. *Global Markets* provides market-making, financing, securities clearing, settlement and custody services globally to our institutional investor clients in support of their investing and trading activities. We also work with our commercial and corporate clients to provide risk management products using interest rate, equity, credit, currency and commodity derivatives, foreign exchange, fixed-income and mortgage-related products. As a result of our market-making activities in these products, we may be required to manage risk in a broad range of financial products including government securities, equity and equity-linked securities, high-grade and high-yield corporate debt securities, syndicated loans, MBS, commodities and asset-backed securities. The economics of certain investment banking and underwriting activities are shared primarily between *Global Markets* and *Global Banking* under an internal revenue-sharing arrangement. *Global Banking* originates certain deal-related transactions with our corporate and commercial clients that are executed and distributed by *Global Markets*. For information on investment banking fees on a consolidated basis, see page 43.

The following explanations for year-over-year changes for *Global Markets*, including those disclosed under Sales and Trading Revenue, are the same for amounts including and excluding net DVA. Amounts excluding net DVA are a non-GAAP financial measure. For more information on net DVA, see Supplemental Financial Data on page 32.

Net income for *Global Markets* decreased $375 million to $4.2 billion. Net DVA gains were $20 million compared to losses of $54 million in 2021. Excluding net DVA, net income decreased $431 million to $4.2 billion. These decreases were primarily driven by lower revenue, partially offset by lower noninterest expense.

Revenue decreased $1.1 billion to $18.1 billion primarily due to lower investment banking fees, partially offset by higher sales and trading revenue. Sales and trading revenue increased $1.3 billion, and excluding net DVA, sales and trading revenue increased $1.2 billion. These increases were driven by higher revenue in both FICC and Equities.

Noninterest expense decreased $612 million to $12.4 billion primarily driven by the realignment of a liquidating business activity from *Global Markets* to *All Other* in the fourth quarter of 2021 and an acceleration of expenses from incentive compensation award changes in the prior year.

Average total assets increased $71.6 billion to $857.6 billion driven by loan growth and commodities activity in FICC. Period-end total assets increased $64.7 billion to $812.5 billion

driven by loan growth, an increase in commodities activity, and higher derivative balances due to higher interest rates.

The return on average allocated capital was 10 percent, down from 12 percent, reflecting lower net income and an increase in allocated capital. For more information on capital allocated to the business segments, see Business Segment Operations on page 37.

Sales and Trading Revenue

Sales and trading revenue includes unrealized and realized gains and losses on trading and other assets which are included in market making and similar activities, net interest income, and fees primarily from commissions on equity securities. Sales and trading revenue is segregated into fixed-income (government debt obligations, investment and non-investment grade corporate debt obligations, commercial MBS, residential mortgage-backed securities, collateralized loan obligations, interest rate and credit derivative contracts), currencies (interest rate and foreign exchange contracts), commodities (primarily futures, forwards, swaps and options) and equities (equity-linked derivatives and cash equity activity). The following table and related discussion present sales and trading revenue, substantially all of which is in *Global Markets,* with the remainder in *Global Banking*. In addition, the following table and related discussion also present sales and trading revenue, excluding net DVA, which is a non-GAAP financial measure. For more information on net DVA, see Supplemental Financial Data on page 32.

Sales and Trading Revenue [1, 2, 3]

(Dollars in millions)	2022	2021
Sales and trading revenue		
Fixed income, currencies and commodities	**$ 9,917**	$ 8,761
Equities	**6,572**	6,428
Total sales and trading revenue	**$ 16,489**	$ 15,189
Sales and trading revenue, excluding net DVA [4]		
Fixed income, currencies and commodities	**$ 9,898**	$ 8,810
Equities	**6,571**	6,433
Total sales and trading revenue, excluding net DVA	**$ 16,469**	$ 15,243

(1) For more information on sales and trading revenue, see *Note 3 – Derivatives* to the Consolidated Financial Statements.
(2) Includes FTE adjustments of $354 million and $421 million for 2022 and 2021.
(3) Includes *Global Banking* sales and trading revenue of $1.0 billion and $510 million for 2022 and 2021.
(4) FICC and Equities sales and trading revenue, excluding net DVA, is a non-GAAP financial measure. FICC net DVA gains (losses) were $19 million and $(49) million for 2022 and 2021. Equities net DVA gains (losses) were $1 million and $(5) million for 2022 and 2021.

Including and excluding net DVA, FICC revenue increased $1.2 billion and $1.1 billion driven by improved trading performance across interest rate and currency products, partially offset by a weaker trading environment for credit products in the current-year period and a gain in commodities from a weather-related event in the prior year. Including and excluding net DVA, Equities revenue increased $144 million and $138 million driven by strong performances in derivatives and client financing activities, partially offset by a weaker performance in cash.

All Other

(Dollars in millions)	2022	2021	% Change
Net interest income	**$ 117**	$ 246	(52)%
Noninterest income (loss)	**(5,479)**	(5,589)	(2)
Total revenue, net of interest expense	**(5,362)**	(5,343)	—
Provision for credit losses	**(172)**	(182)	(5)
Noninterest expense	**2,485**	1,519	64
Loss before income taxes	**(7,675)**	(6,680)	15
Income tax benefit	**(6,023)**	(8,069)	(25)
Net income (loss)	**$ (1,652)**	$ 1,389	n/m
Balance Sheet			
Average			
Total loans and leases	**$ 12,683**	$ 18,447	(31)%
Total assets [1]	**139,466**	191,831	(27)
Total deposits	**20,082**	16,512	22
Year end			
Total loans and leases	**$ 10,234**	$ 15,863	(35)%
Total assets [1]	**155,074**	214,153	(28)
Total deposits	**19,905**	21,182	(6)

(1) In segments where the total of liabilities and equity exceeds assets, which are generally deposit-taking segments, we allocate assets from *All Other* to those segments to match liabilities (i.e., deposits) and allocated shareholders' equity. Average allocated assets were $1.1 trillion for both 2022 and 2021, and year-end allocated assets were $1.0 trillion and $1.2 trillion at December 31, 2022 and 2021.
n/m = not meaningful

All Other primarily consists of asset and liability management (ALM) activities, liquidating businesses and certain expenses not otherwise allocated to a business segment. ALM activities encompass interest rate and foreign currency risk management activities for which substantially all of the results are allocated to our business segments. For more information on our ALM activities, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Net income decreased $3.0 billion to a loss of $1.7 billion primarily due to a lower income tax benefit and higher noninterest expense.

Noninterest expense increased $966 million primarily driven by the realignment of a liquidating business activity from *Global Markets* to *All Other* in the fourth quarter of 2021, expense associated with the settlement of the legacy monoline insurance litigation and expense related to certain regulatory matters, partially offset by decreases in other expenses.

The income tax benefit was $6.0 billion in 2022 compared to a benefit of $8.1 billion in 2021. The decrease in the tax benefit was primarily driven by the impact of the U.K. tax law change in 2021. For more information, see Financial Highlights - Income Tax Expense on page 29. Both periods included income tax benefit adjustments to eliminate the FTE treatment of certain tax credits recorded in *Global Banking* and *Global Markets*.

Managing Risk

Risk is inherent in all our business activities. Sound risk management enables us to serve our customers and deliver for our shareholders. If not managed well, risk can result in financial loss, regulatory sanctions and penalties, and damage to our reputation, each of which may adversely impact our ability to execute our business strategies. We take a comprehensive approach to risk management with a defined Risk Framework and an articulated Risk Appetite Statement, which are approved annually by the ERC and the Board.

The seven key types of risk faced by the Corporation are strategic, credit, market, liquidity, compliance, operational and reputational.

- Strategic risk is the risk to current or projected financial condition arising from incorrect assumptions about external or internal factors, inappropriate business plans, ineffective business strategy execution or failure to respond in a timely manner to changes in the regulatory, macroeconomic or competitive environments in the geographic locations in which we operate.
- Credit risk is the risk of loss arising from the inability or failure of a borrower or counterparty to meet its obligations.
- Market risk is the risk that changes in market conditions adversely impact the value of assets or liabilities or otherwise negatively impact earnings. Market risk is composed of price risk and interest rate risk.
- Liquidity risk is the inability to meet expected or unexpected cash flow and collateral needs while continuing to support our businesses and customers under a range of economic conditions.
- Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the reputation of the Corporation arising from the failure of the Corporation to comply with the requirements of applicable laws, rules and regulations and our internal policies and procedures.
- Operational risk is the risk of loss resulting from inadequate or failed internal processes or systems, people or external events.
- Reputational risk is the risk that negative perception of the Corporation may adversely impact profitability or operations.

The following sections address in more detail the specific procedures, measures and analyses of the major categories of risk. This discussion of managing risk focuses on the current Risk Framework that, as part of its annual review process, was approved by the ERC and the Board.

As set forth in our Risk Framework, a culture of managing risk well is fundamental to our values and our purpose, and how we drive Responsible Growth. It requires us to focus on risk in all activities and encourages the necessary mindset and behavior to enable effective risk management and promote sound risk-taking within our risk appetite. Sustaining a culture of managing risk well throughout the organization is critical to the success of the Corporation and is a clear expectation of our executive management team and the Board.

Our Risk Framework serves as the foundation for the consistent and effective management of risks facing the Corporation. The Risk Framework sets forth roles and responsibilities for the management of risk and provides a blueprint for how the Board, through delegation of authority to committees and executive officers, establishes risk appetite and associated limits for our activities.

Executive management assesses, with Board oversight, the risk-adjusted returns of each business. Management reviews and approves the strategic and financial operating plans, as well as the capital plan and Risk Appetite Statement, and recommends them annually to the Board for approval. Our strategic plan takes into consideration return objectives and financial resources, which must align with risk capacity and risk appetite. Management sets financial objectives for each business by allocating capital and setting a target for return on capital for each business. Capital allocations and operating limits are regularly evaluated as part of our overall governance processes as the businesses and the economic environment in which we operate continue to evolve. For more information regarding capital allocations, see Business Segment Operations on page 37.

The Corporation's risk appetite indicates the amount of capital, earnings or liquidity we are willing to put at risk to achieve our strategic objectives and business plans, consistent with applicable regulatory requirements. Our risk appetite provides a common framework that includes a set of measures to assist senior management and the Board in assessing the Corporation's risk profile against our risk appetite and risk capacity. Our risk appetite is formally articulated in the Risk Appetite Statement, which includes both qualitative statements and quantitative limits.

Our overall capacity to take risk is limited; therefore, we prioritize the risks we take in order to maintain a strong and flexible financial position so we can withstand challenging economic conditions and take advantage of organic growth opportunities. Therefore, we set objectives and targets for capital and liquidity that are intended to permit us to continue to operate in a safe and sound manner at all times, including during periods of stress.

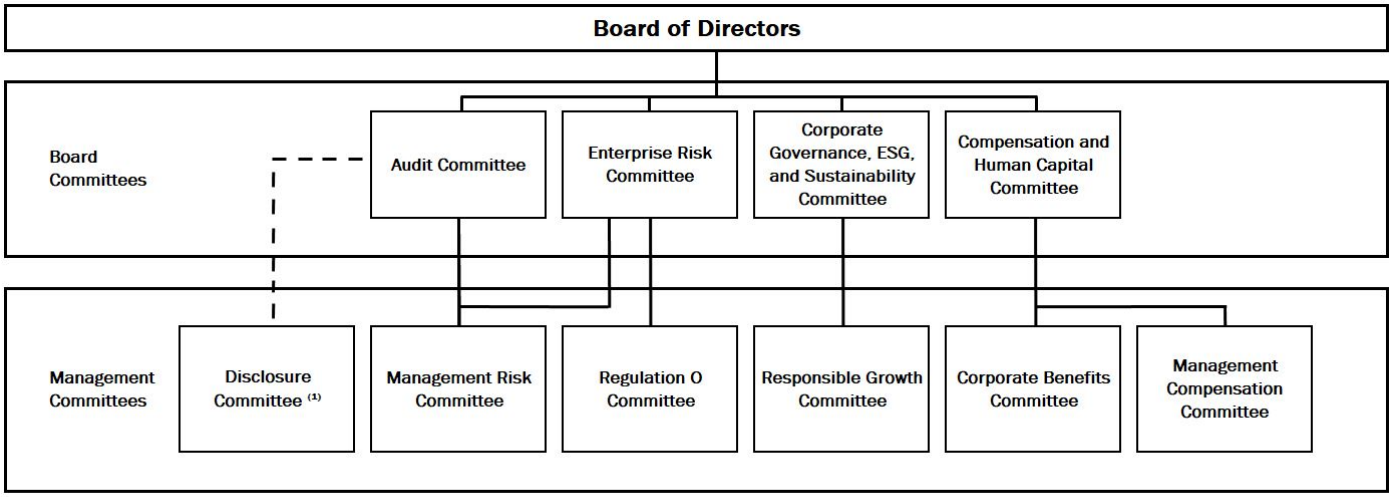
Our lines of business operate with risk limits that align with the Corporation's risk appetite. Senior management is responsible for tracking and reporting performance measurements as well as any exceptions to risk appetite limits. The Board, and its committees when appropriate, oversee financial performance, execution of the strategic and financial operating plans, adherence to risk appetite limits and the adequacy of internal controls.

For a more detailed discussion of our risk management activities, see the discussion below and pages 49 through 82.

Risk Management Governance

The Risk Framework describes delegations of authority whereby the Board and its committees may delegate authority to management-level committees or executive officers. Such delegations may authorize certain decision-making and approval functions, which may be evidenced in documents such as committee charters, job descriptions, meeting minutes and resolutions.

The chart below illustrates the interrelationship among the Board, Board committees and management committees that have the majority of risk oversight responsibilities for the Corporation.



(1) Reports to the CEO and CFO with oversight by the Audit Committee

Board of Directors and Board Committees

The Board is composed of 15 directors, all but one of whom are independent. The Board authorizes management to maintain an effective Risk Framework and oversees compliance with safe and sound banking practices. In addition, the Board or its committees conduct inquiries of, and receive reports from senior management on, risk-related matters to assess scope or resource limitations that could impede the ability of Global Risk Management (GRM) and/or Corporate Audit to execute its responsibilities. The Board committees discussed below have the principal responsibility for enterprise-wide oversight of our risk management activities. Through these activities, the Board and applicable committees are provided with information on our risk profile and oversee senior management addressing key risks we face. Other Board committees, as described below, provide additional oversight of specific risks.

Each of the committees shown on the above chart regularly reports to the Board on risk-related matters within the committee's responsibilities, which is intended to collectively provide the Board with integrated insight about our management of enterprise-wide risks.

Audit Committee

The Audit Committee oversees the qualifications, performance and independence of the Independent Registered Public Accounting Firm, the performance of our corporate audit function, the integrity of our consolidated financial statements, our compliance with legal and regulatory requirements, and makes inquiries of senior management or the Chief Audit Executive (CAE) to determine whether there are scope or resource limitations that impede the ability of Corporate Audit to execute its responsibilities. The Audit Committee is also responsible for overseeing compliance risks pursuant to the New York Stock Exchange listing standards.

Enterprise Risk Committee

The ERC oversees the Corporation's Risk Framework, risk appetite and senior management's responsibilities for the identification, measurement, monitoring and control of key risks facing the Corporation. The ERC may consult with other Board committees on risk-related matters.

Other Board Committees

Our Corporate Governance, ESG, and Sustainability Committee oversees our Board's governance processes, identifies and reviews the qualifications of potential Board members, leads Board and committee succession planning and their formal self-evaluation, and reviews our ESG activities, shareholder input and shareholder engagement process.

Our Compensation and Human Capital Committee oversees establishing, maintaining and administering our compensation programs and employee benefit plans, including approving and recommending our Chief Executive Officer's (CEO) compensation to our Board for further approval by all independent directors; reviewing and approving our executive officers' compensation, as well as compensation for non-management directors; and reviewing certain other human capital management topics, including pay equity and diversity and inclusion.

Management Committees

Management committees receive their authority from the Board, a Board committee, or another management committee. Our primary management risk committee is the MRC. Subject to Board oversight, the MRC is responsible for management oversight of key risks facing the Corporation, including an integrated evaluation of risk, earnings, capital and liquidity.

Lines of Defense

We have clear ownership and accountability for managing risk across three lines of defense: Front Line Units (FLUs), GRM and Corporate Audit. We also have control functions outside of FLUs and GRM (e.g., Legal and Global Human Resources). The three lines of defense are integrated into our management-level governance structure. Each of these functional roles is further described in this section.

Executive Officers

Executive officers lead various functions representing the functional roles. Authority for functional roles may be delegated to executive officers from the Board, Board committees or management-level committees. Executive officers, in turn, may further delegate responsibilities, as appropriate, to management-level committees, management routines or individuals. Executive officers review our activities for consistency with our Risk Framework, risk appetite, and applicable strategic, capital and financial operating plans, as well as applicable policies and standards. Executive officers and other employees make decisions individually on a day-to-day basis, consistent with the authority they have been delegated. Executive officers and other employees may also serve on committees and participate in committee decisions.

Front Line Units

FLUs, which include the lines of business as well as Global Technology and Global Operations, are responsible for appropriately assessing and effectively managing all of the risks associated with their activities.

Three organizational units that include FLU activities and control function activities, but are not part of GRM are first, the Chief Financial Officer Group; second, the Chief Administrative Officer Group; and third, Global Strategy and Enterprise Platforms.

Global Risk Management

GRM is part of our control functions and operates as our independent risk management function. GRM, led by the Chief Risk Officer (CRO), is responsible for independently assessing and overseeing risks within FLUs and other control functions. GRM establishes written enterprise policies and procedures outlining how aggregate risks are identified, measured, monitored and controlled.

The CRO has the stature, authority and independence needed to develop and implement a meaningful risk management framework and practices to guide the Corporation in managing risk. The CRO has unrestricted access to the Board and reports directly to both the ERC and the CEO. GRM is organized into horizontal risk teams that cover a specific risk area and vertical CRO teams that cover a particular FLU or control function. These teams work collaboratively in executing their respective duties.

Corporate Audit

Corporate Audit and the CAE maintain their independence from the FLUs, GRM and other control functions by reporting directly to the Audit Committee. The CAE administratively reports to the CEO. Corporate Audit provides independent assessment and validation through testing of key processes and controls across the Corporation. Corporate Audit includes Credit Review, which provides an independent assessment of credit lending decisions and the effectiveness of credit processes across the Corporation's credit platform through examinations and monitoring.

Risk Management Processes

The Risk Framework requires that strong risk management practices are integrated in key strategic, capital and financial planning processes and in day-to-day business processes across the Corporation, thereby ensuring risks are appropriately considered, evaluated and responded to in a timely manner. We employ an effective risk management process, referred to as Identify, Measure, Monitor and Control, as part of our daily activities.

Identify – To be effectively managed, risks must be proactively identified and well understood. Proper risk identification focuses on recognizing and understanding key risks inherent in our business activities or key risks that may arise from external factors. Each employee is expected to identify and escalate risks promptly. Risk identification is an ongoing process that incorporates input from FLUs and control functions. It is designed to be forward-looking and to capture relevant risk factors across all of our lines of business.

Measure – Once a risk is identified, it must be prioritized and accurately measured through a systematic process including qualitative statements and quantitative limits. Risk is measured at various levels, including, but not limited to, risk type, FLU and legal entity, and also on an aggregate basis. This risk measurement process helps to capture changes in our risk profile due to changes in strategic direction, concentrations, portfolio quality and the overall economic environment. Senior management considers how risk exposures might evolve under a variety of stress scenarios.

Monitor – We monitor risk levels regularly to track adherence to risk appetite, policies and standards. We also regularly update risk assessments and review risk exposures. Through our monitoring, we know our level of risk relative to limits and can take action in a timely manner. We also know when risk limits are breached and have processes to appropriately report and escalate exceptions. This includes timely requests for approval to managers and alerts to executive management, management-level committees or the Board (directly or through an appropriate committee).

Control – We establish and communicate risk limits and controls through policies, standards, procedures and processes. The limits and controls can be adjusted by senior management or the Board when conditions or risk tolerances warrant. These limits may be absolute (e.g., loan amount, trading volume, operational loss) or relative (e.g., percentage of loan book in higher-risk categories). Our FLUs are held accountable for performing within the established limits.

The formal processes used to manage risk represent a part of our overall risk management process. We instill a strong and comprehensive culture of managing risk well through communications, training, policies, procedures and organizational roles and responsibilities. Establishing a culture reflective of our purpose to help make our customers' financial lives better and delivering on Responsible Growth is also critical to effective risk management. We are committed to the highest principles of ethical and professional conduct. Conduct risk is the risk of improper actions, behaviors or practices by the Corporation, its employees or representatives that are illegal, unethical and/or contrary to our core values that could result in harm to the Corporation, our shareholders or our customers, damage the integrity of the financial markets, or negatively impact our reputation. We have established protocols and structures so that conduct risk is governed and reported across the Corporation appropriately. All employees are held accountable for adhering to the Code of Conduct, operating within our risk appetite and managing risk in their daily business activities. In addition, our performance management and compensation practices encourage responsible risk-taking that is consistent with our Risk Framework and risk appetite.

Corporation-wide Stress Testing

Integral to our Capital Planning, Financial Planning and Strategic Planning processes, we conduct capital scenario management and stress forecasting on a periodic basis to better understand balance sheet, earnings and capital sensitivities to certain economic and business scenarios, including economic and market conditions that are more severe than anticipated. These stress forecasts provide an understanding of the potential impacts from our risk profile on the balance sheet, earnings and capital, and serve as a key component of our capital and risk management practices. The intent of stress testing is to develop a comprehensive understanding of potential impacts of on- and off-balance sheet risks at the Corporation and certain subsidiaries and how they impact financial resiliency, which provides confidence to management, regulators and our investors.

Contingency Planning

We have developed and maintain contingency plans that are designed to prepare us in advance to respond in the event of

potential adverse economic, financial or market stress. These contingency plans include our Capital Contingency Plan and Financial Contingency and Recovery Plan, which provide monitoring, escalation, actions and routines designed to enable us to increase capital, access funding sources and reduce risk through consideration of potential options that include asset sales, business sales, capital or debt issuances, and other de-risking strategies. We also maintain a Resolution Plan to limit adverse systemic impacts that could be associated with a potential resolution of Bank of America.

Strategic Risk Management

Strategic risk is embedded in every business and is one of the major risk categories along with credit, market, liquidity, compliance, operational and reputational risks. This risk results from incorrect assumptions about external or internal factors, inappropriate business plans, ineffective business strategy execution, or failure to respond in a timely manner to changes in the regulatory, macroeconomic or competitive environments in the geographic locations in which we operate, such as competitor actions, changing customer preferences, product obsolescence and technology developments.

An aspect of strategic risk is the risk that the Corporation's capital levels are not adequate to meet minimum regulatory requirements and support execution of business activities or absorb losses from risks during normal or adverse economic and market conditions. As such, capital risk is managed in parallel to strategic risk.

We manage strategic risk through the Strategic Risk Enterprise Policy and integration into the strategic planning process, among other activities. Our strategic plan is consistent with our risk appetite, capital plan and liquidity requirements, and specifically addresses strategic risks impacting each business.

On an annual basis, the Board reviews and approves the strategic plan, capital plan, financial operating plan and Risk Appetite Statement. With oversight by the Board, senior management directs the lines of business to execute our strategic plan consistent with our core operating principles and risk appetite. The executive management team monitors business performance throughout the year and provides the Board with regular progress reports on whether strategic objectives and timelines are being met, including reports on strategic risks and if additional or alternative actions need to be considered or implemented. The regular executive reviews focus on assessing forecasted earnings and returns on capital, the current risk profile, current capital and liquidity requirements, staffing levels and changes required to support the strategic plan, stress testing results, and other qualitative factors such as market growth rates and peer analysis.

Significant strategic actions, such as capital actions, material acquisitions or divestitures, and resolution plans are reviewed and approved by the Board. At the business level, processes are in place to discuss the strategic risk implications of new, expanded or modified businesses, products or services and other strategic initiatives, and to provide formal review and approval where required. With oversight by the Board and the ERC, executive management performs similar analyses throughout the year, and evaluates changes to the financial forecast or the risk, capital or liquidity positions as deemed appropriate to balance and optimize achieving the targeted risk appetite, shareholder returns and maintaining the targeted financial strength. Proprietary models are used to measure the capital requirements for credit, country, market, operational and strategic risks. The allocated capital assigned to each business is based on its unique risk profile. With oversight by the Board, executive management assesses the risk-adjusted returns of each business in approving strategic and financial operating plans. The businesses use allocated capital to define business strategies, and price products and transactions.

Capital Management

The Corporation manages its capital position so that its capital is more than adequate to support its business activities and aligns with risk, risk appetite and strategic planning. Additionally, we seek to maintain safety and soundness at all times, even under adverse scenarios, take advantage of organic growth opportunities, meet obligations to creditors and counterparties, maintain ready access to financial markets, continue to serve as a credit intermediary, remain a source of strength for our subsidiaries, and satisfy current and future regulatory capital requirements. Capital management is integrated into our risk and governance processes, as capital is a key consideration in the development of our strategic plan, risk appetite and risk limits.

We conduct an Internal Capital Adequacy Assessment Process (ICAAP) on a periodic basis. The ICAAP is a forward-looking assessment of our projected capital needs and resources, incorporating earnings, balance sheet and risk forecasts under baseline and adverse economic and market conditions. We utilize periodic stress tests to assess the potential impacts to our balance sheet, earnings, regulatory capital and liquidity under a variety of stress scenarios. We perform qualitative risk assessments to identify and assess material risks not fully captured in our forecasts or stress tests. We assess the potential capital impacts of proposed changes to regulatory capital requirements. Management assesses ICAAP results and provides documented quarterly assessments of the adequacy of our capital guidelines and capital position to the Board or its committees.

We periodically review capital allocated to our businesses and allocate capital annually during the strategic and capital planning processes. For more information, see Business Segment Operations on page 37.

CCAR and Capital Planning

The Federal Reserve requires BHCs to submit a capital plan and planned capital actions on an annual basis, consistent with the rules governing the Comprehensive Capital Analysis and Review (CCAR) capital plan. Based on the results of our 2022 CCAR stress test, our stress capital buffer (SCB) increased to 3.4 percent from 2.5 percent, effective October 1, 2022 through September 30, 2023.

In October 2021, the Board authorized the Corporation's $25 billion common stock repurchase program. Additionally, the Board authorized common stock repurchases to offset shares awarded under the Corporation's equity-based compensation plans. Pursuant to the Board's authorizations, during 2022, we repurchased $5.1 billion of common stock, including repurchases to offset shares awarded under equity-based compensation plans.

The timing and amount of common stock repurchases are subject to various factors, including the Corporation's capital position, liquidity, financial performance and alternative uses of capital, stock trading price, regulatory requirements and general market conditions, and may be suspended at any time. Such repurchases may be effected through open market purchases or privately negotiated transactions, including repurchase plans that satisfy the conditions of Rule 10b5-1 of the Securities Exchange Act of 1934, as amended (Exchange Act).

Regulatory Capital

As a financial services holding company, we are subject to regulatory capital rules, including Basel 3, issued by U.S. banking regulators. Basel 3 established minimum capital ratios and buffer requirements and outlined two methods of calculating risk-weighted assets (RWA), the Standardized approach and the Advanced approaches. The Standardized approach relies primarily on supervisory risk weights based on exposure type, and the Advanced approaches determine risk weights based on internal models.

The Corporation's depository institution subsidiaries are also subject to the Prompt Corrective Action (PCA) framework. The Corporation and its primary affiliated banking entity, BANA, are Advanced approaches institutions under Basel 3 and are required to report regulatory risk-based capital ratios and RWA under both the Standardized and Advanced approaches. The lower of the capital ratios under Standardized or Advanced approaches compared to their respective regulatory capital ratio requirements are used to assess capital adequacy, including under the PCA framework. As of December 31, 2022, the common equity tier 1 (CET1), Tier 1 capital and Total capital ratios under the Standardized approach were the binding ratios.

Minimum Capital Requirements

In order to avoid restrictions on capital distributions and discretionary bonus payments, the Corporation must meet risk-based capital ratio requirements that include a capital conservation buffer of 2.5 percent (under the Advanced approaches only), an SCB (under the Standardized approach only), plus any applicable countercyclical capital buffer and a global systemically important bank (G-SIB) surcharge. The buffers and surcharge must be comprised solely of CET1 capital. For the period from October 1, 2021 through September 30, 2022, the Corporation's minimum CET1 capital ratio requirement was 9.5 percent under both the Standardized and Advanced approaches. Based on the results of our 2022 CCAR stress test, the Corporation's SCB increased to 3.4 percent, resulting in a minimum CET1 capital ratio requirement of 10.4 percent under the Standardized approach for the period from October 1, 2022 through September 30, 2023. Our minimum CET1 capital ratio requirement under the Advanced approaches remains unchanged at 9.5 percent.

The Corporation is required to calculate its G-SIB surcharge on an annual basis under two methods and is subject to the higher of the resulting two surcharges. Method 1 is consistent with the approach prescribed by the Basel Committee's assessment methodology and is calculated using specified indicators of systemic importance. Method 2 modifies the Method 1 approach by, among other factors, including a measure of the Corporation's reliance on short-term wholesale funding. The Corporation's G-SIB surcharge, which is higher under Method 2, is expected to increase to 3.0 percent from 2.5 percent on January 1, 2024, which will increase our minimum CET1 capital ratio requirement. At December 31, 2022, the Corporation's CET1 capital ratio of 11.2 percent under the Standardized approach exceeded its current CET1 capital ratio requirement as well as the minimum requirement expected to be in place as of January 1, 2024 due to an anticipated increase in our G-SIB surcharge.

The Corporation is also required to maintain a minimum supplementary leverage ratio (SLR) of 3.0 percent plus a leverage buffer of 2.0 percent in order to avoid certain restrictions on capital distributions and discretionary bonus payments. Our insured depository institution subsidiaries are required to maintain a minimum 6.0 percent SLR to be considered well capitalized under the PCA framework. The numerator of the SLR is quarter-end Basel 3 Tier 1 capital. The denominator is total leverage exposure based on the daily average of the sum of on-balance sheet exposures less permitted deductions, and applicable temporary exclusions, as well as the simple average of certain off-balance sheet exposures, as of the end of each month in a quarter.

Capital Composition and Ratios

Table 10 presents Bank of America Corporation's capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2022 and 2021. For the periods presented herein, the Corporation met the definition of well capitalized under current regulatory requirements.

Table 10 Bank of America Corporation Regulatory Capital under Basel 3

(Dollars in millions, except as noted)	Standardized Approach [1]	Advanced Approaches [1]	Regulatory Minimum [2]
	December 31, 2022		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 180,060	$ 180,060	
Tier 1 capital	208,446	208,446	
Total capital [3]	238,773	230,916	
Risk-weighted assets (in billions)	1,605	1,411	
Common equity tier 1 capital ratio	11.2 %	12.8 %	10.4 %
Tier 1 capital ratio	13.0	14.8	11.9
Total capital ratio	14.9	16.4	13.9
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [4]	$ 2,997	$ 2,997	
Tier 1 leverage ratio	7.0 %	7.0 %	4.0
Supplementary leverage exposure (in billions)		$ 3,523	
Supplementary leverage ratio		5.9 %	5.0
	December 31, 2021		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 171,759	$ 171,759	
Tier 1 capital	196,465	196,465	
Total capital [3]	227,592	220,616	
Risk-weighted assets (in billions)	1,618	1,399	
Common equity tier 1 capital ratio	10.6 %	12.3 %	9.5 %
Tier 1 capital ratio	12.1	14.0	11.0
Total capital ratio	14.1	15.8	13.0
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [4]	$ 3,087	$ 3,087	
Tier 1 leverage ratio	6.4 %	6.4 %	4.0
Supplementary leverage exposure (in billions)		$ 3,604	
Supplementary leverage ratio		5.5 %	5.0

[1] Capital ratios as of December 31, 2022 and 2021 are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of the current expected credit losses (CECL) accounting standard on January 1, 2020.

[2] The capital conservation buffer and G-SIB surcharge were 2.5 percent at both December 31, 2022 and 2021. The Corporation's SCB applied in place of the capital conservation buffer under the Standardized approach was 3.4 percent at December 31, 2022 and 2.5 percent at December 31, 2021. The countercyclical capital buffer for both periods was zero. The CET1 capital regulatory minimum is the sum of the CET1 capital ratio minimum of 4.5 percent, our G-SIB surcharge of 2.5 percent and our capital conservation buffer of 2.5 percent or the SCB, as applicable, of 3.4 percent at December 31, 2022 and 2.5 percent at December 31, 2021. The SLR regulatory minimum includes a leverage buffer of 2.0 percent.

[3] Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.

[4] Reflects total average assets adjusted for certain Tier 1 capital deductions.

At December 31, 2022, CET1 capital was $180.1 billion, an increase of $8.3 billion from December 31, 2021, due to earnings, partially offset by dividends, common stock repurchases and higher net unrealized losses on available-for-sale debt securities included in accumulated other comprehensive income (OCI). Tier 1 capital increased $12.0 billion primarily driven by the same factors as CET1 capital as well as non-cumulative perpetual preferred stock issuances. Total capital under the Standardized approach increased $11.2 billion primarily due to the same factors driving the increase in Tier 1 capital and an increase in the adjusted allowance for credit losses included in Tier 2 capital, partially offset by a decrease in subordinated debt. RWA under the Standardized approach, which yielded the lower CET1 capital ratio at December 31, 2022, decreased $13.0 billion during 2022 to $1,605 billion primarily due to lower counterparty exposures in *Global Markets* and a decrease in debt securities in the Treasury portfolio, partially offset by loan growth. Supplementary leverage exposure at December 31, 2022 decreased $80.3 billion primarily due to lower debt securities, driven by lower deposits, partially offset by loan growth.

Table 11 shows the capital composition at December 31, 2022 and 2021.

Table 11 Capital Composition under Basel 3

(Dollars in millions)	December 31 2022	2021
Total common shareholders' equity	**$ 244,800**	$ 245,358
CECL transitional amount [1]	**1,881**	2,508
Goodwill, net of related deferred tax liabilities	**(68,644)**	(68,641)
Deferred tax assets arising from net operating loss and tax credit carryforwards	**(7,776)**	(7,743)
Intangibles, other than mortgage servicing rights, net of related deferred tax liabilities	**(1,554)**	(1,605)
Defined benefit pension plan net assets	**(867)**	(1,261)
Cumulative unrealized net (gain) loss related to changes in fair value of financial liabilities attributable to own creditworthiness, net-of-tax	**496**	1,400
Accumulated net (gain) loss on certain cash flow hedges [2]	**11,925**	1,870
Other	**(201)**	(127)
Common equity tier 1 capital	**180,060**	171,759
Qualifying preferred stock, net of issuance cost	**28,396**	24,707
Other	**(10)**	(1)
Tier 1 capital	**208,446**	196,465
Tier 2 capital instruments	**18,751**	20,750
Qualifying allowance for credit losses [3]	**11,739**	10,534
Other	**(163)**	(157)
Total capital under the Standardized approach	**238,773**	227,592
Adjustment in qualifying allowance for credit losses under the Advanced approaches [3]	**(7,857)**	(6,976)
Total capital under the Advanced approaches	**$ 230,916**	$ 220,616

[1] Includes the impact of the Corporation's adoption of the CECL accounting standard on January 1, 2020 and 25 percent of the increase in reserves since the initial adoption.
[2] Includes amounts in accumulated other comprehensive income related to the hedging of items that are not recognized at fair value on the Consolidated Balance Sheet.
[3] Includes the impact of transition provisions related to the CECL accounting standard.

Table 12 shows the components of RWA as measured under Basel 3 at December 31, 2022 and 2021.

Table 12 Risk-weighted Assets under Basel 3

(Dollars in billions)	Standardized Approach	Advanced Approaches	Standardized Approach	Advanced Approaches
	December 31			
	2022		2021	
Credit risk	**$ 1,538**	**$ 939**	$ 1,549	$ 913
Market risk	**67**	**67**	69	69
Operational risk [1]	**n/a**	**364**	n/a	378
Risks related to credit valuation adjustments	**n/a**	**41**	n/a	39
Total risk-weighted assets	**$ 1,605**	**$ 1,411**	$ 1,618	$ 1,399

[1] December 31, 2022 includes the effects of an update made to our operational risk RWA model during the fourth quarter of 2022.
n/a = not applicable

Bank of America, N.A. Regulatory Capital

Table 13 presents regulatory capital information for BANA in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2022 and 2021. BANA met the definition of well capitalized under the PCA framework for both periods.

Table 13 Bank of America, N.A. Regulatory Capital under Basel 3

(Dollars in millions, except as noted)	Standardized Approach [1]	Advanced Approaches [1]	Regulatory Minimum [2]
	December 31, 2022		
Risk-based capital metrics:			
Common equity tier 1 capital	**$ 181,089**	**$ 181,089**	
Tier 1 capital	**181,089**	**181,089**	
Total capital [3]	**194,254**	**186,648**	
Risk-weighted assets (in billions)	**1,386**	**1,087**	
Common equity tier 1 capital ratio	**13.1 %**	**16.7 %**	**7.0 %**
Tier 1 capital ratio	**13.1**	**16.7**	**8.5**
Total capital ratio	**14.0**	**17.2**	**10.5**
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [4]	**$ 2,358**	**$ 2,358**	
Tier 1 leverage ratio	**7.7 %**	**7.7 %**	**5.0**
Supplementary leverage exposure (in billions)		**$ 2,785**	
Supplementary leverage ratio		**6.5 %**	**6.0**
	December 31, 2021		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 182,526	$ 182,526	
Tier 1 capital	182,526	182,526	
Total capital [3]	194,773	188,091	
Risk-weighted assets (in billions)	1,352	1,048	
Common equity tier 1 capital ratio	13.5 %	17.4 %	7.0 %
Tier 1 capital ratio	13.5	17.4	8.5
Total capital ratio	14.4	17.9	10.5
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [4]	$ 2,414	$ 2,414	
Tier 1 leverage ratio	7.6 %	7.6 %	5.0
Supplementary leverage exposure (in billions)		$ 2,824	
Supplementary leverage ratio		6.5 %	6.0

(1) Capital ratios as of December 31, 2022 and 2021 are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of the CECL accounting standard on January 1,2020 .

(2) Risk-based capital regulatory minimums at both December 31, 2022 and 2021 are the minimum ratios under Basel 3 including a capital conservation buffer of 2.5 percent. The regulatory minimums for the leverage ratios as of both period ends are the percent required to be considered well capitalized under the PCA framework.

(3) Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.

(4) Reflects total average assets adjusted for certain Tier 1 capital deductions.

Total Loss-Absorbing Capacity Requirements

Total loss-absorbing capacity (TLAC) consists of the Corporation's Tier 1 capital and eligible long-term debt issued directly by the Corporation. Eligible long-term debt for TLAC ratios is comprised of unsecured debt that has a remaining maturity of at least one year and satisfies additional requirements as prescribed in the TLAC final rule. As with the risk-based capital ratios and SLR, the Corporation is required to maintain TLAC ratios in excess of minimum requirements plus applicable buffers to avoid restrictions on capital distributions and discretionary bonus payments. Table 14 presents the Corporation's TLAC and long-term debt ratios and related information as of December 31, 2022 and 2021.

Table 14 Bank of America Corporation Total Loss-Absorbing Capacity and Long-Term Debt

(Dollars in millions)	TLAC [1]	Regulatory Minimum [2]	Long-term Debt	Regulatory Minimum [3]
	December 31, 2022			
Total eligible balance	$ 465,451		$ 243,833	
Percentage of risk-weighted assets [4]	29.0 %	22.0 %	15.2 %	8.5 %
Percentage of supplementary leverage exposure	13.2	9.5	6.9	4.5
	December 31, 2021			
Total eligible balance	$ 435,904		$ 227,714	
Percentage of risk-weighted assets [4]	26.9 %	22.0 %	14.1 %	8.5 %
Percentage of supplementary leverage exposure	12.1	9.5	6.3	4.5

[1] As of December 31, 2022 and 2021, TLAC ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of CECL.
[2] The TLAC RWA regulatory minimum consists of 18.0 percent plus a TLAC RWA buffer comprised of 2.5 percent plus the Method 1 G-SIB surcharge of 1.5 percent. The countercyclical buffer is zero for both periods. The TLAC supplementary leverage exposure regulatory minimum consists of 7.5 percent plus a 2.0 percent TLAC leverage buffer. The TLAC RWA and leverage buffers must be comprised solely of CET1 capital and Tier 1 capital, respectively.
[3] The long-term debt RWA regulatory minimum is comprised of 6.0 percent plus an additional 2.5 percent requirement based on the Corporation's Method 2 G-SIB surcharge. The long-term debt leverage exposure regulatory minimum is 4.5 percent.
[4] The approach that yields the higher RWA is used to calculate TLAC and long-term debt ratios, which was the Standardized approach as of December 31, 2022 and 2021.

Regulatory Capital and Securities Regulation

The Corporation's principal U.S. broker-dealer subsidiaries are BofA Securities, Inc. (BofAS), Merrill Lynch Professional Clearing Corp. (MLPCC) and Merrill Lynch, Pierce, Fenner & Smith Incorporated (MLPF&S). The Corporation's principal European broker-dealer subsidiaries are Merrill Lynch International (MLI) and BofA Securities Europe SA (BofASE).

The U.S. broker-dealer subsidiaries are subject to the net capital requirements of Rule 15c3-1 under the Exchange Act. BofAS computes its minimum capital requirements as an alternative net capital broker-dealer under Rule 15c3-1e, and MLPCC and MLPF&S compute their minimum capital requirements in accordance with the alternative standard under Rule 15c3-1. BofAS and MLPCC are also registered as futures commission merchants and are subject to Commodity Futures Trading Commission (CFTC) Regulation 1.17. The U.S. broker-dealer subsidiaries are also registered with the Financial Industry Regulatory Authority, Inc. (FINRA). Pursuant to FINRA Rule 4110, FINRA may impose higher net capital requirements than Rule 15c3-1 under the Exchange Act with respect to each of the broker-dealers.

BofAS provides institutional services, and in accordance with the alternative net capital requirements, is required to maintain tentative net capital in excess of $5.0 billion and net capital in excess of the greater of $1.0 billion or a certain percentage of its reserve requirement in addition to a certain percentage of securities-based swap risk margin. BofAS must also notify the SEC in the event its tentative net capital is less than $6.0 billion. BofAS is also required to hold a certain percentage of its customers' and affiliates' risk-based margin in order to meet its CFTC minimum net capital requirement. At December 31, 2022, BofAS had tentative net capital of $20.9 billion. BofAS also had regulatory net capital of $17.5 billion, which exceeded the minimum requirement of $4.1 billion.

MLPCC is a fully-guaranteed subsidiary of BofAS and provides clearing and settlement services as well as prime brokerage and arranged financing services for institutional clients. At December 31, 2022, MLPCC's regulatory net capital of $7.5 billion exceeded the minimum requirement of $1.4 billion.

MLPF&S provides retail services. At December 31, 2022, MLPF&S' regulatory net capital was $6.0 billion, which exceeded the minimum requirement of $137 million.

Our European broker-dealers are subject to requirements from U.S. and non-U.S. regulators. MLI, a U.K. investment firm, is regulated by the Prudential Regulation Authority and the Financial Conduct Authority and is subject to certain regulatory capital requirements. At December 31, 2022, MLI's capital resources were $33.4 billion, which exceeded the minimum Pillar 1 requirement of $11.6 billion.

BofASE is an authorized credit institution with its head office located in France. Previously, BofASE had been authorized as an investment firm, but following the European Union's adoption of the harmonized Investment Firm Directive and Investment Firm Regulation prudential regime, it was required to apply for reauthorization as a credit institution. The application was approved in November 2022 and became effective on December 8, 2022. BofASE is authorized and regulated by the Autorité de Contrôle Prudentiel et de Résolution and the Autorité des Marchés Financiers, and supervised under the Single Supervisory Mechanism by the European Central Bank. At December 31, 2022, BofASE's capital resources were $9.0 billion, which exceeded the minimum Pillar 1 requirement of $3.0 billion.

In addition, MLI and BofASE became conditionally registered with the SEC as security-based swap dealers in the fourth quarter of 2021, and maintained net liquid assets at December 31, 2022 that exceeded the applicable minimum requirements under the Exchange Act.

Liquidity Risk

Funding and Liquidity Risk Management

Our primary liquidity risk management objective is to meet expected or unexpected cash flow and collateral requirements, including payments under long-term debt agreements, commitments to extend credit and customer deposit withdrawals, while continuing to support our businesses and customers under a range of economic conditions. To achieve that objective, we analyze and monitor our liquidity risk under expected and stressed conditions, maintain liquidity and access to diverse funding sources, including our stable deposit base, and seek to align liquidity-related incentives and risks. These liquidity risk management practices have allowed us to effectively manage the market fluctuation from the rising interest rate environment, inflationary pressures and macroeconomic environment.

We define liquidity as readily available assets, limited to cash and high-quality, liquid, unencumbered securities that we can use to meet our contractual and contingent financial obligations as they arise. We manage our liquidity position through line-of-business and ALM activities, as well as through our legal entity funding strategy, on both a forward and current

(including intraday) basis under both expected and stressed conditions. We believe that a centralized approach to funding and liquidity management enhances our ability to monitor liquidity requirements, maximizes access to funding sources, minimizes borrowing costs and facilitates timely responses to liquidity events.

The Board approves our liquidity risk policy and the Financial Contingency and Recovery Plan. The ERC establishes our liquidity risk tolerance levels. The MRC is responsible for overseeing liquidity risks and directing management to maintain exposures within the established tolerance levels. The MRC reviews and monitors our liquidity position and stress testing results, approves certain liquidity risk limits and reviews the impact of strategic decisions on our liquidity. For more information, see Managing Risk on page 46. Under this governance framework, we developed certain funding and liquidity risk management practices which include: maintaining liquidity at Bank of America Corporation (Parent) and selected subsidiaries, including our bank subsidiaries and other regulated entities; determining what amounts of liquidity are appropriate for these entities based on analysis of debt maturities and other potential cash outflows, including those that we may experience during stressed market conditions; diversifying funding sources, considering our asset profile and legal entity structure; and performing contingency planning.

NB Holdings Corporation

The Parent, which is a separate and distinct legal entity from our bank and nonbank subsidiaries, has an intercompany arrangement with our wholly-owned holding company subsidiary, NB Holdings Corporation (NB Holdings). We have transferred, and agreed to transfer, additional Parent assets not required to satisfy anticipated near-term expenditures to NB Holdings. The Parent is expected to continue to have access to the same flow of dividends, interest and other amounts of cash necessary to service its debt, pay dividends and perform other obligations as it would have had it not entered into these arrangements and transferred any assets. These arrangements support our preferred single point of entry resolution strategy, under which only the Parent would be resolved under the U.S. Bankruptcy Code.

In consideration for the transfer of assets, NB Holdings issued a subordinated note to the Parent in a principal amount equal to the value of the transferred assets. The aggregate principal amount of the note will increase by the amount of any future asset transfers. NB Holdings also provided the Parent with a committed line of credit that allows the Parent to draw funds necessary to service near-term cash needs. These arrangements support our preferred single point of entry resolution strategy, under which only the Parent would be resolved under the U.S. Bankruptcy Code. These arrangements include provisions to terminate the line of credit, forgive the subordinated note and require the Parent to transfer its remaining financial assets to NB Holdings if our projected liquidity resources deteriorate so severely that resolution of the Parent becomes imminent.

Global Liquidity Sources and Other Unencumbered Assets

We maintain liquidity available to the Corporation, including the Parent and selected subsidiaries, in the form of cash and high-quality, liquid, unencumbered securities. Our liquidity buffer, referred to as Global Liquidity Sources (GLS), is comprised of assets that are readily available to the Parent and selected subsidiaries, including holding company, bank and broker-dealer subsidiaries, even during stressed market conditions. Our cash is primarily on deposit with the Federal Reserve Bank and, to a lesser extent, central banks outside of the U.S. We limit the composition of high-quality, liquid, unencumbered securities to U.S. government securities, U.S. agency securities, U.S. agency MBS and other investment-grade securities, and a select group of non-U.S. government securities. We can obtain cash for these securities, even in stressed conditions, through repurchase agreements or outright sales. We hold our GLS in legal entities that allow us to meet the liquidity requirements of our global businesses, and we consider the impact of potential regulatory, tax, legal and other restrictions that could limit the transferability of funds among entities.

Table 15 presents average GLS for the three months ended December 31, 2022 and 2021.

Table 15 Average Global Liquidity Sources

	Three Months Ended December 31	
(Dollars in billions)	**2022**	2021
Bank entities	**$ 694**	$ 1,006
Nonbank and other entities [1]	**174**	152
Total Average Global Liquidity Sources	**$ 868**	$ 1,158

[1] Nonbank includes Parent, NB Holdings and other regulated entities.

Our bank subsidiaries' liquidity is primarily driven by deposit and lending activity, as well as securities valuation and net debt activity. Bank subsidiaries can also generate incremental liquidity by pledging a range of unencumbered loans and securities to certain FHLBs and the Federal Reserve Discount Window. The cash we could have obtained by borrowing against this pool of specifically-identified eligible assets was $348 billion and $322 billion at December 31, 2022 and 2021. We have established operational procedures to enable us to borrow against these assets, including regularly monitoring our total pool of eligible loans and securities collateral. Eligibility is defined in guidelines from the FHLBs and the Federal Reserve and is subject to change at their discretion. Due to regulatory restrictions, liquidity generated by the bank subsidiaries can generally be used only to fund obligations within the bank subsidiaries, and transfers to the Parent or nonbank subsidiaries may be subject to prior regulatory approval.

Liquidity is also held in nonbank entities, including the Parent, NB Holdings and other regulated entities. The Parent and NB Holdings liquidity is typically in the form of cash deposited at BANA, which is excluded from the liquidity at bank subsidiaries, and high-quality, liquid, unencumbered securities. Liquidity held in other regulated entities, comprised primarily of broker-dealer subsidiaries, is primarily available to meet the obligations of that entity, and transfers to the Parent or to any other subsidiary may be subject to prior regulatory approval due to regulatory restrictions and minimum requirements. Our other regulated entities also hold unencumbered investment-grade securities and equities that we believe could be used to generate additional liquidity.

Table 16 presents the composition of average GLS for the three months ended December 31, 2022 and December 31, 2021.

Table 16 Average Global Liquidity Sources Composition

(Dollars in billions)	Three Months Ended December 31 2022	2021
Cash on deposit	$ 174	$ 259
U.S. Treasury securities	252	278
U.S. agency securities, mortgage-backed securities, and other investment-grade securities	427	606
Non-U.S. government securities	15	15
Total Average Global Liquidity Sources	**$ 868**	$ 1,158

Our GLS are substantially the same in composition to what qualifies as High Quality Liquid Assets (HQLA) under the final U.S. Liquidity Coverage Ratio (LCR) rules. However, HQLA for purposes of calculating LCR is not reported at market value, but at a lower value that incorporates regulatory deductions and the exclusion of excess liquidity held at certain subsidiaries. The LCR is calculated as the amount of a financial institution's unencumbered HQLA relative to the estimated net cash outflows the institution could encounter over a 30-day period of significant liquidity stress, expressed as a percentage. Our average consolidated HQLA, on a net basis, was $605 billion and $617 billion for the three months ended December 31, 2022 and 2021. For the same periods, the average consolidated LCR was 120 percent and 115 percent. Our LCR fluctuates due to normal business flows from customer activity.

Liquidity Stress Analysis

We utilize liquidity stress analysis to assist us in determining the appropriate amounts of liquidity to maintain at the Parent and our subsidiaries to meet contractual and contingent cash outflows under a range of scenarios. The scenarios we consider and utilize incorporate market-wide and Corporation-specific events, including potential credit rating downgrades for the Parent and our subsidiaries, and more severe events including potential resolution scenarios. The scenarios are based on our historical experience, experience of distressed and failed financial institutions, regulatory guidance, and both expected and unexpected future events.

The types of potential contractual and contingent cash outflows we consider in our scenarios may include, but are not limited to, upcoming contractual maturities of unsecured debt and reductions in new debt issuances; diminished access to secured financing markets; potential deposit withdrawals; increased draws on loan commitments, liquidity facilities and letters of credit; additional collateral that counterparties could call if our credit ratings were downgraded; collateral and margin requirements arising from market value changes; and potential liquidity required to maintain businesses and finance customer activities. Changes in certain market factors, including, but not limited to, credit rating downgrades, could negatively impact potential contractual and contingent outflows and the related financial instruments, and in some cases these impacts could be material to our financial results.

We consider all sources of funds that we could access during each stress scenario and focus particularly on matching available sources with corresponding liquidity requirements by legal entity. We also use the stress modeling results to manage our asset and liability profile and establish limits and guidelines on certain funding sources and businesses.

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is a liquidity requirement for large banks to maintain a minimum level of stable funding over a one-year period. The requirement is intended to support the ability of banks to lend to households and businesses in both normal and adverse economic conditions and is complementary to the LCR, which focuses on short-term liquidity risks. The U.S. NSFR applies to the Corporation on a consolidated basis and to our insured depository institutions. At December 31, 2022, the Corporation and its insured depository institutions were in compliance with this requirement.

Diversified Funding Sources

We fund our assets primarily with a mix of deposits, and secured and unsecured liabilities through a centralized, globally coordinated funding approach diversified across products, programs, markets, currencies and investor groups.

The primary benefits of our centralized funding approach include greater control, reduced funding costs, wider name recognition by investors and greater flexibility to meet the variable funding requirements of subsidiaries. Where regulations, time zone differences or other business considerations make Parent funding impractical, certain other subsidiaries may issue their own debt.

We fund a substantial portion of our lending activities through our deposits, which were $1.93 trillion and $2.1 trillion at December 31, 2022 and 2021. Deposits are primarily generated by our *Consumer Banking, GWIM and Global Banking* segments. These deposits are diversified by clients, product type and geography, and the majority of our U.S. deposits are insured by the FDIC. We consider a substantial portion of our deposits to be a stable, low-cost and consistent source of funding. We believe this deposit funding is generally less sensitive to interest rate changes, market volatility or changes in our credit ratings than wholesale funding sources. Our lending activities may also be financed through secured borrowings, including credit card securitizations and securitizations with government-sponsored enterprises (GSE), the Federal Housing Administration (FHA) and private-label investors, as well as FHLB loans.

Our trading activities in other regulated entities are primarily funded on a secured basis through securities lending and repurchase agreements, and these amounts will vary based on customer activity and market conditions. We believe funding these activities in the secured financing markets is more cost-efficient and less sensitive to changes in our credit ratings than unsecured financing. Repurchase agreements are generally short-term and often overnight. Disruptions in secured financing markets for financial institutions have occurred in prior market cycles which resulted in adverse changes in terms or significant reductions in the availability of such financing. We manage the liquidity risks arising from secured funding by sourcing funding globally from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate. For more information on secured financing agreements, see *Note 10 – Securities Financing Agreements, Short-term Borrowings, Collateral and Restricted Cash* to the Consolidated Financial Statements.

Total long-term debt decreased $4.1 billion to $276.0 billion during 2022 primarily due to debt maturities, redemptions and valuation adjustments, partially offset by debt issuances. We may, from time to time, purchase outstanding debt instruments in various transactions, depending on market conditions, liquidity and other factors. Our other regulated entities may also make markets in our debt instruments to provide liquidity for investors.

During 2022, we issued $66.0 billion of long-term debt consisting of $44.2 billion of notes issued by Bank of America Corporation, substantially all of which were TLAC compliant,

$10.0 billion of notes issued by Bank of America, N.A. and $11.8 billion of other debt. During 2021, we issued $76.7 billion of long-term debt consisting of $56.2 billion of notes issued by Bank of America Corporation, substantially all of which were TLAC compliant, $8 billion of notes issued by Bank of America, N.A. and $12.5 billion of other debt.

During 2022, we had total long-term debt maturities and redemptions in the aggregate of $33.3 billion consisting of $19.8 billion for Bank of America Corporation, $9.9 billion for Bank of America, N.A. and $3.6 billion of other debt. During 2021, we had total long-term debt maturities and redemptions in the aggregate of $46.4 billion consisting of $24.4 billion for Bank of America Corporation, $10.4 billion for Bank of America, N.A. and $11.6 billion of other debt.

At December 31, 2022, Bank of America Corporation's senior notes of $205.9 billion included $179.1 billion of outstanding notes that are both TLAC eligible and callable at least one year before their stated maturities. Of these senior notes, $16.6 billion will be callable and become TLAC ineligible during 2023, and $21.4 billion, $21.3 billion, $16.0 billion and $24.4 billion will do so during each of 2024 through 2027, respectively, and $79.4 billion thereafter.

We issue long-term unsecured debt in a variety of maturities and currencies to achieve cost-efficient funding and to maintain an appropriate maturity profile. While the cost and availability of unsecured funding may be negatively impacted by general market conditions or by matters specific to the financial services industry or the Corporation, we seek to mitigate refinancing risk by actively managing the amount of our borrowings that we anticipate will mature within any month or quarter. We may issue unsecured debt in the form of structured notes for client purposes, certain of which qualify as TLAC-eligible debt. During 2022, we issued $12.5 billion of structured notes, which are debt obligations that pay investors returns linked to other debt or equity securities, indices, currencies or commodities. We typically hedge the returns we are obligated to pay on these liabilities with derivatives and/or investments in the underlying instruments, so that from a funding perspective, the cost is similar to our other unsecured long-term debt. We could be required to settle certain structured note obligations for cash or other securities prior to maturity under certain circumstances, which we consider for liquidity planning purposes. We believe, however, that a portion of such borrowings will remain outstanding beyond the earliest put or redemption date.

Substantially all of our senior and subordinated debt obligations contain no provisions that could trigger a requirement for an early repayment, require additional collateral support, result in changes to terms, accelerate maturity or create additional financial obligations upon an adverse change in our credit ratings, financial ratios, earnings, cash flows or stock price. For more information on long-term debt funding, including issuances and maturities and redemptions, see *Note 11 – Long-term Debt* to the Consolidated Financial Statements.

We use derivative transactions to manage the duration, interest rate and currency risks of our borrowings, considering the characteristics of the assets they are funding. For more information on our ALM activities, see Interest Rate Risk Management for the Banking Book on page 79.

Uninsured Deposits

The FDIC insures the Corporation's U.S. deposits up to $250,000 per depositor, per insured bank for each account ownership category, and various country-specific funds insure non-U.S. deposits up to specified limits. Deposits that exceed insurance limits are uninsured. At December 31, 2022, the Corporation's deposits totaled $1.9 trillion, of which total estimated uninsured U.S. and non-U.S. deposits were $617.6 billion and $102.8 billion. At December 31, 2021, the Corporation's deposits totaled $2.1 trillion, of which total estimated uninsured U.S. and non-U.S. deposits were $701.4 billion and $111.9 billion.

Table 17 presents information about the Corporation's total estimated uninsured time deposits. For more information on our liquidity sources, see Global Liquidity Sources and Other Unencumbered Assets, and for more information on deposits, see Diversified Funding Sources in this section. For more information on contractual time deposit maturities, see *Note 9 – Deposits* to the Consolidated Financial Statements.

Table 17 Uninsured Time Deposits [1]

	December 31, 2022		
(Dollars in millions)	U.S.	Non-U.S.	Total
Uninsured time deposits with a maturity of:			
3 months or less	$ 3,721	$ 7,023	$ 10,744
Over 3 months through 6 months	2,230	275	2,505
Over 6 months through 12 months	2,712	86	2,798
Over 12 months	686	1,566	2,252
Total	$ 9,349	$ 8,950	$ 18,299

[1] Amounts are estimated based on the regulatory methodologies defined by each local jurisdiction.

Contingency Planning

We maintain contingency funding plans that outline our potential responses to liquidity stress events at various levels of severity. These policies and plans are based on stress scenarios and include potential funding strategies and communication and notification procedures that we would implement in the event we experienced stressed liquidity conditions. We periodically review and test the contingency funding plans to validate efficacy and assess readiness.

Our U.S. bank subsidiaries can access contingency funding through the Federal Reserve Discount Window. Certain non-U.S. subsidiaries have access to central bank facilities in the jurisdictions in which they operate. While we do not rely on these sources in our liquidity modeling, we maintain the policies, procedures and governance processes that would enable us to access these sources if necessary.

Credit Ratings

Our borrowing costs and ability to raise funds are impacted by our credit ratings. In addition, credit ratings may be important to customers or counterparties when we compete in certain markets and when we seek to engage in certain transactions, including over-the-counter (OTC) derivatives. Thus, it is our objective to maintain high-quality credit ratings, and management maintains an active dialogue with the major rating agencies.

Credit ratings and outlooks are opinions expressed by rating agencies on our creditworthiness and that of our obligations or securities, including long-term debt, short-term borrowings, preferred stock and other securities, including asset securitizations. Our credit ratings are subject to ongoing review by the rating agencies, and they consider a number of factors, including our own financial strength, performance, prospects and operations as well as factors not under our control. The rating agencies could make adjustments to our ratings at any

time, and they provide no assurances that they will maintain our ratings at current levels.

Other factors that influence our credit ratings include changes to the rating agencies' methodologies for our industry or certain security types; the rating agencies' assessment of the general operating environment for financial services companies; our relative positions in the markets in which we compete; our various risk exposures and risk management policies and activities; pending litigation and other contingencies or potential tail risks; our reputation; our liquidity position, diversity of funding sources and funding costs; the current and expected level and volatility of our earnings; our capital position and capital management practices; our corporate governance; the sovereign credit ratings of the U.S. government; current or future regulatory and legislative initiatives; and the agencies' views on whether the U.S. government would provide meaningful support to the Corporation or its subsidiaries in a crisis.

On September 19, 2022, Fitch Ratings (Fitch) affirmed the long-term and short-term senior debt ratings of the Corporation. Fitch also affirmed and withdrew the long-term and short-term ratings on certain subsidiaries, as they are no longer considered relevant to the agency's coverage.

On January 23, 2023, Moody's Investors Service (Moody's) placed the long-term rating of the Corporation as well as the long-term rating of its rated subsidiaries, including BANA, on review for upgrade. The agency cited the Corporation's strengthened capital ratios, improved earnings profile and continued commitment to maintaining a restrained risk appetite as drivers of the review. A review for upgrade indicates that those ratings are under consideration for a change in the near term and typically concludes within 90 days. Moody's concurrently affirmed all Prime-1 short-term ratings of the Corporation and rated subsidiaries.

The current ratings and outlooks for the Corporation and its subsidiaries from Standard & Poor's Global Ratings (S&P) were not the subject of any rating actions during 2022 or through February 22, 2023.

Table 18 presents the Corporation's current long-term/short-term senior debt ratings and outlooks expressed by the rating agencies.

Table 18 Senior Debt Ratings

	Moody's Investors Service			Standard & Poor's Global Ratings			Fitch Ratings		
	Long-term	Short-term	Outlook	Long-term	Short-term	Outlook	Long-term	Short-term	Outlook
Bank of America Corporation	A2	P-1	Review for Upgrade	A-	A-2	Positive	AA-	F1+	Stable
Bank of America, N.A.	Aa2	P-1	Review for Upgrade	A+	A-1	Positive	AA	F1+	Stable
Bank of America Europe Designated Activity Company	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
Merrill Lynch, Pierce, Fenner & Smith Incorporated	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
BofA Securities, Inc.	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
Merrill Lynch International	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable
BofA Securities Europe SA	NR	NR	NR	A+	A-1	Positive	AA	F1+	Stable

NR = not rated

A reduction in certain of our credit ratings or the ratings of certain asset-backed securitizations may have a material adverse effect on our liquidity, potential loss of access to credit markets, the related cost of funds, our businesses and on certain revenues, particularly in those businesses where counterparty creditworthiness is critical. In addition, under the terms of certain OTC derivative contracts and other trading agreements, in the event of downgrades of our or our rated subsidiaries' credit ratings, the counterparties to those agreements may require us to provide additional collateral, or to terminate these contracts or agreements, which could cause us to sustain losses and/or adversely impact our liquidity. If the short-term credit ratings of our Parent, bank or broker-dealer subsidiaries were downgraded by one or more levels, the potential loss of access to short-term funding sources such as repo financing and the effect on our incremental cost of funds could be material.

While certain potential impacts are contractual and quantifiable, the full scope of the consequences of a credit rating downgrade to a financial institution is inherently uncertain, as it depends upon numerous dynamic, complex and inter-related factors and assumptions, including whether any downgrade of a company's long-term credit ratings precipitates downgrades to its short-term credit ratings, and assumptions about the potential behaviors of various customers, investors and counterparties. For more information on potential impacts of credit rating downgrades, see Liquidity Risk – Liquidity Stress Analysis on page 56.

For more information on additional collateral and termination payments that could be required in connection with certain over-the-counter derivative contracts and other trading agreements in the event of a credit rating downgrade, see *Note 3 – Derivatives* to the Consolidated Financial Statements herein and Item 1A. Risk Factors.

Common Stock Dividends

For a summary of our declared quarterly cash dividends on common stock during 2022 and through February 22, 2023, see *Note 13 – Shareholders' Equity* to the Consolidated Financial Statements.

Finance Subsidiary Issuers and Parent Guarantor

BofA Finance LLC, a Delaware limited liability company (BofA Finance), is a consolidated finance subsidiary of the Corporation that has issued and sold, and is expected to continue to issue and sell, its senior unsecured debt securities (Guaranteed Notes) that are fully and unconditionally guaranteed by the Corporation. The Corporation guarantees the due and punctual payment, on demand, of amounts payable on the Guaranteed Notes if not paid by BofA Finance. In addition, each of BAC Capital Trust XIII, BAC Capital Trust XIV and BAC Capital Trust XV, Delaware statutory trusts (collectively, the Trusts), is a 100 percent owned finance subsidiary of the Corporation that has issued and sold trust preferred securities (the Trust Preferred

Securities) or capital securities (the Capital Securities and, together with the Guaranteed Notes and the Trust Preferred Securities, the Guaranteed Securities), as applicable, that remained outstanding at December 31, 2022. The Corporation guarantees the payment of amounts and distributions with respect to the Trust Preferred Securities and Capital Securities if not paid by the Trusts, to the extent of funds held by the Trusts, and this guarantee, together with the Corporation's other obligations with respect to the Trust Preferred Securities and Capital Securities, effectively constitutes a full and unconditional guarantee of the Trusts' payment obligations on the Trust Preferred Securities or Capital Securities, as applicable. No other subsidiary of the Corporation guarantees the Guaranteed Securities.

BofA Finance and each of the Trusts are finance subsidiaries, have no independent assets, revenues or operations and are dependent upon the Corporation and/or the Corporation's other subsidiaries to meet their respective obligations under the Guaranteed Securities in the ordinary course. If holders of the Guaranteed Securities make claims on their Guaranteed Securities in a bankruptcy, resolution or similar proceeding, any recoveries on those claims will be limited to those available under the applicable guarantee by the Corporation, as described above.

The Corporation is a holding company and depends upon its subsidiaries for liquidity. Applicable laws and regulations and intercompany arrangements entered into in connection with the Corporation's resolution plan could restrict the availability of funds from subsidiaries to the Corporation, which could adversely affect the Corporation's ability to make payments under its guarantees. In addition, the obligations of the Corporation under the guarantees of the Guaranteed Securities will be structurally subordinated to all existing and future liabilities of its subsidiaries, and claimants should look only to assets of the Corporation for payments. If the Corporation, as guarantor of the Guaranteed Notes, transfers all or substantially all of its assets to one or more direct or indirect majority-owned subsidiaries, under the indenture governing the Guaranteed Notes, the subsidiary or subsidiaries will not be required to assume the Corporation's obligations under its guarantee of the Guaranteed Notes.

For more information on factors that may affect payments to holders of the Guaranteed Securities, see Liquidity Risk – NB Holdings Corporation in this section, Item 1. Business – Insolvency and the Orderly Liquidation Authority on page 6 and Part I. Item 1A. Risk Factors – Liquidity on page 9.

Representations and Warranties Obligations

For information on representations and warranties obligations in connection with the sale of mortgage loans, see *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Credit Risk Management

Credit risk is the risk of loss arising from the inability or failure of a borrower or counterparty to meet its obligations. Credit risk can also arise from operational failures that result in an erroneous advance, commitment or investment of funds. We define the credit exposure to a borrower or counterparty as the loss potential arising from all product classifications including loans and leases, deposit overdrafts, derivatives, assets held-for-sale and unfunded lending commitments, which include loan commitments, letters of credit and financial guarantees. Derivative positions are recorded at fair value, and assets held-for-sale are recorded at either fair value or the lower of cost or fair value. Certain loans and unfunded commitments are accounted for under the fair value option. Credit risk for categories of assets carried at fair value is not accounted for as part of the allowance for credit losses but as part of the fair value adjustments recorded in earnings. For derivative positions, our credit risk is measured as the net cost in the event the counterparties with contracts in which we are in a gain position fail to perform under the terms of those contracts. We use the current fair value to represent credit exposure without giving consideration to future mark-to-market changes. The credit risk amounts take into consideration the effects of legally enforceable master netting agreements and cash collateral. Our consumer and commercial credit extension and review procedures encompass funded and unfunded credit exposures. For more information on derivatives and credit extension commitments, see *Note 3 – Derivatives* and *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

We manage credit risk based on the risk profile of the borrower or counterparty, repayment sources, the nature of underlying collateral and other support given current events, conditions and expectations. We classify our portfolios as either consumer or commercial and monitor credit risk in each as discussed below.

We refine our underwriting and credit risk management practices as well as credit standards to meet the changing economic environment. To mitigate losses and enhance customer support in our consumer businesses, we have in place collection programs and loan modification and customer assistance infrastructures. We utilize a number of actions to mitigate losses in the commercial businesses including increasing the frequency and intensity of portfolio monitoring, hedging activity and our practice of transferring management of deteriorating commercial exposures to independent special asset officers as credits enter criticized categories.

During 2022, asset quality generally improved compared to 2021. Our 2022 net charge-off ratio remained near historic lows, and nonperforming loans and commercial reservable criticized utilized exposure decreased compared to 2021, which was partially offset by an increase in reservable criticized exposure associated with our direct exposure to Russia as a result of the Russia/Ukraine conflict. While uncertainty around the pandemic has diminished, uncertainty remains regarding broader economic impacts as a result of inflationary pressures, rising rates and the current geopolitical situation and could lead to adverse impacts to credit quality metrics in future periods.

For information on our credit risk management activities, see Consumer Portfolio Credit Risk Management below, Commercial Portfolio Credit Risk Management on page 64, Non-U.S. Portfolio on page 70, Allowance for Credit Losses on page 73, and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements. For more information on the factors that may expose us to credit risk, see Part I. Item 1A. Risk Factors of this Annual Report on Form 10-K.

Consumer Portfolio Credit Risk Management

Credit risk management for the consumer portfolio begins with initial underwriting and continues throughout a borrower's credit cycle. Statistical techniques in conjunction with experiential judgment are used in all aspects of portfolio management including underwriting, product pricing, risk appetite, setting credit limits, and establishing operating processes and metrics to quantify and balance risks and returns. Statistical models are built using detailed behavioral information from external

sources, such as credit bureaus, and/or internal historical experience and are a component of our consumer credit risk management process. These models are used in part to assist in making both new and ongoing credit decisions as well as portfolio management strategies, including authorizations and line management, collection practices and strategies, and determination of the allowance for loan and lease losses and allocated capital for credit risk.

Consumer Credit Portfolio

During 2022, the U.S. unemployment rate continued to decline and home prices increased compared to 2021, although they began to decline in the second half of 2022 as inflationary pressures continued to persist. During 2022, net charge-offs were $1.9 billion, relatively unchanged compared to 2021. During 2022, nonperforming loans declined primarily due to decreases from consumer real estate loan sales, partially offset by increases from loans whose prior-period deferrals expired and were modified in troubled debt restructurings (TDRs) during the first quarter of 2022.

The consumer allowance for loan and lease losses increased $204 million during 2022 to $7.2 billion. For more information, see Allowance for Credit Losses on page 73.

For more information on our accounting policies regarding delinquencies, nonperforming status, charge-offs and TDRs for the consumer portfolio, see *Note 1 – Summary of Significant Accounting Principles* and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

Table 19 presents our outstanding consumer loans and leases, consumer nonperforming loans and accruing consumer loans past due 90 days or more.

Table 19 Consumer Credit Quality

	Outstandings		Nonperforming		Accruing Past Due 90 Days or More	
	December 31					
(Dollars in millions)	**2022**	2021	**2022**	2021	**2022**	2021
Residential mortgage [1]	**$ 229,670**	$ 221,963	**$ 2,167**	$ 2,284	**$ 368**	$ 634
Home equity	**26,563**	27,935	**510**	630	**—**	—
Credit card	**93,421**	81,438	**n/a**	n/a	**717**	487
Direct/Indirect consumer [2]	**106,236**	103,560	**77**	75	**2**	11
Other consumer	**156**	190	**—**	—	**—**	—
Consumer loans excluding loans accounted for under the fair value option	**$ 456,046**	$ 435,086	**$ 2,754**	$ 2,989	**$ 1,087**	$ 1,132
Loans accounted for under the fair value option [3]	**339**	618				
Total consumer loans and leases	**$ 456,385**	$ 435,704				
Percentage of outstanding consumer loans and leases [4]	**n/a**	n/a	**0.60 %**	0.69 %	**0.24 %**	0.26 %
Percentage of outstanding consumer loans and leases, excluding fully-insured loan portfolios [4]	**n/a**	n/a	**0.62**	0.71	**0.16**	0.12

[1] Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2022 and 2021, residential mortgage included $260 million and $444 million of loans on which interest had been curtailed by the FHA, and therefore were no longer accruing interest, although principal was still insured, and $108 million and $190 million of loans on which interest was still accruing.
[2] Outstandings primarily includes auto and specialty lending loans and leases of $51.8 billion and $48.5 billion, U.S. securities-based lending loans of $50.4 billion and $51.1 billion at December 31, 2022 and 2021, and non-U.S. consumer loans of $3.0 billion as of both period ends.
[3] For more information on the fair value option, see *Note 21 – Fair Value Option* to the Consolidated Financial Statements.
[4] Excludes consumer loans accounted for under the fair value option. At December 31, 2022 and 2021, $7 million and $21 million of loans accounted for under the fair value option were past due 90 days or more and not accruing interest.
n/a = not applicable

Table 20 presents net charge-offs and related ratios for consumer loans and leases.

Table 20 Consumer Net Charge-offs and Related Ratios

	Net Charge-offs		Net Charge-off Ratios [1]	
(Dollars in millions)	**2022**	2021	**2022**	2021
Residential mortgage	**$ 72**	$ (28)	**0.03 %**	(0.01)%
Home equity	**(90)**	(119)	**(0.33)**	(0.39)
Credit card	**1,334**	1,723	**1.60**	2.29
Direct/Indirect consumer	**18**	1	**0.02**	—
Other consumer	**521**	270	**n/m**	n/m
Total	**$ 1,855**	$ 1,847	**0.42**	0.44

[1] Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans and leases, excluding loans accounted for under the fair value option.
n/m = not meaningful

We believe that the presentation of information adjusted to exclude the impact of the fully-insured loan portfolio and loans accounted for under the fair value option is more representative of the ongoing operations and credit quality of the business. As a result, in the following tables and discussions of the residential mortgage and home equity portfolios, we exclude loans accounted for under the fair value option and provide information that excludes the impact of the fully-insured loan portfolio in certain credit quality statistics.

Residential Mortgage

The residential mortgage portfolio made up the largest percentage of our consumer loan portfolio at 50 percent of consumer loans and leases in 2022. Approximately 51 percent of the residential mortgage portfolio was in *Consumer Banking* and 45 percent was in *GWIM*. The remaining portion was in *All Other*.

Outstanding balances in the residential mortgage portfolio increased $7.7 billion in 2022 as originations were partially offset by paydowns and loan sales.

At December 31, 2022 and 2021, the residential mortgage portfolio included $11.7 billion and $12.7 billion of outstanding fully-insured loans, of which both had $2.2 billion of FHA insurance, with the remainder protected by Fannie Mae long-term standby agreements.

Table 21 presents certain residential mortgage key credit statistics on both a reported basis and excluding the fully-insured loan portfolio. The following discussion presents the residential mortgage portfolio excluding the fully-insured loan portfolio.

Table 21 Residential Mortgage – Key Credit Statistics

	Reported Basis [1]		Excluding Fully-insured Loans [1]	
	December 31			
(Dollars in millions)	**2022**	2021	**2022**	2021
Outstandings	**$ 229,670**	$ 221,963	**$ 217,976**	$ 209,259
Accruing past due 30 days or more	**1,471**	1,753	**844**	866
Accruing past due 90 days or more	**368**	634	**—**	—
Nonperforming loans [2]	**2,167**	2,284	**2,167**	2,284
Percent of portfolio				
Refreshed LTV greater than 90 but less than or equal to 100	**1%**	1 %	**1%**	1 %
Refreshed LTV greater than 100	**—**	—	**—**	—
Refreshed FICO below 620	**1**	2	**1**	1

[1] Outstandings, accruing past due, nonperforming loans and percentages of portfolio exclude loans accounted for under the fair value option.
[2] Includes loans that are contractually current which primarily consist of collateral-dependent TDRs, including those that have been discharged in Chapter 7 bankruptcy and loans that have not yet demonstrated a sustained period of payment performance following a TDR.

Nonperforming outstanding balances in the residential mortgage portfolio decreased $117 million in 2022 primarily due to decreases from consumer real estate loan sales in the second quarter of 2022, partially offset by increases from loans whose prior-period deferrals expired and were modified in TDRs during the first quarter of 2022. Of the nonperforming residential mortgage loans at December 31, 2022, $1.4 billion, or 63 percent, were current on contractual payments. Loans accruing past due 30 days or more decreased $22 million.

Net charge-offs of $72 million for 2022 increased $100 million compared to 2021 primarily due to loan sales that occurred in the second quarter of 2022.

Of the $218.0 billion in total residential mortgage loans outstanding at December 31, 2022, 28 percent were originated as interest-only loans. The outstanding balance of interest-only residential mortgage loans that had entered the amortization period was $3.4 billion, or six percent, at December 31, 2022. Residential mortgage loans that have entered the amortization period generally experience a higher rate of early stage delinquencies and nonperforming status compared to the residential mortgage portfolio as a whole. At December 31, 2022, $64 million, or two percent, of outstanding interest-only residential mortgages that had entered the amortization period were accruing past due 30 days or more compared to $844 million, or less than one percent, for the entire residential mortgage portfolio. In addition, at December 31, 2022, $204 million, or six percent, of outstanding interest-only residential mortgage loans that had entered the amortization period were nonperforming, of which $79 million were contractually current. Loans that have yet to enter the amortization period in our interest-only residential mortgage portfolio are primarily well-collateralized loans to our wealth management clients and have an interest-only period of three to ten years. Approximately 96 percent of these loans that have yet to enter the amortization period will not be required to make a fully-amortizing payment until 2025 or later.

Table 22 presents outstandings, nonperforming loans and net charge-offs by certain state concentrations for the residential mortgage portfolio. The Los Angeles-Long Beach-Santa Ana Metropolitan Statistical Area (MSA) within California represented 14 percent and 15 percent of outstandings at December 31, 2022 and 2021. In the New York area, the New York-Northern New Jersey-Long Island MSA made up 15 percent of outstandings at both December 31, 2022 and 2021.

Table 22 Residential Mortgage State Concentrations

	Outstandings [1]		Nonperforming [1]		Net Charge-offs	
	December 31		December 31			
(Dollars in millions)	**2022**	2021	**2022**	2021	**2022**	2021
California	**$ 80,878**	$ 77,819	**$ 656**	$ 693	**$ 37**	$ (14)
New York	**26,228**	24,975	**328**	358	**7**	3
Florida	**15,225**	13,883	**145**	158	**(2)**	(8)
Texas	**9,399**	9,002	**88**	86	**—**	—
New Jersey	**8,810**	8,723	**96**	117	**3**	—
Other	**77,436**	74,857	**854**	872	**27**	(9)
Residential mortgage loans	**$ 217,976**	$ 209,259	**$ 2,167**	$ 2,284	**$ 72**	$ (28)
Fully-insured loan portfolio	**11,694**	12,704				
Total residential mortgage loan portfolio	**$ 229,670**	$ 221,963				

[1] Outstandings and nonperforming loans exclude loans accounted for under the fair value option.

Home Equity

At December 31, 2022, the home equity portfolio made up six percent of the consumer portfolio and was comprised of home equity lines of credit (HELOCs), home equity loans and reverse mortgages. HELOCs generally have an initial draw period of 10 years, and after the initial draw period ends, the loans generally convert to 15- or 20-year amortizing loans. We no longer originate home equity loans or reverse mortgages.

At December 31, 2022, 82 percent of the home equity portfolio was in *Consumer Banking*, nine percent was in *All Other* and the remainder of the portfolio was primarily in *GWIM*.

Outstanding balances in the home equity portfolio decreased $1.4 billion in 2022 primarily due to paydowns outpacing draws on existing lines and new originations. Of the total home equity portfolio at December 31, 2022 and 2021, $11.1 billion and $12.2 billion, or 42 percent and 44 percent, were in first-lien positions. At December 31, 2022, outstanding balances in the home equity portfolio that were in a second-lien or more junior-lien position and where we also held the first-lien loan totaled $4.5 billion, or 17 percent of our total home equity portfolio.

Unused HELOCs totaled $42.4 billion and $40.5 billion at December 31, 2022 and 2021. The HELOC utilization rate was 38 percent and 39 percent at December 31, 2022 and 2021.

Table 23 presents certain home equity portfolio key credit statistics.

Table 23 Home Equity – Key Credit Statistics [1]

	December 31	
(Dollars in millions)	**2022**	2021
Outstandings	**$ 26,563**	$ 27,935
Accruing past due 30 days or more	**96**	157
Nonperforming loans [2]	**510**	630
Percent of portfolio		
Refreshed CLTV greater than 90 but less than or equal to 100	**—%**	— %
Refreshed CLTV greater than 100	**—**	1
Refreshed FICO below 620	**2**	3

[1] Outstandings, accruing past due, nonperforming loans and percentages of the portfolio exclude loans accounted for under the fair value option.
[2] Includes loans that are contractually current which primarily consist of collateral-dependent TDRs, including those that have been discharged in Chapter 7 bankruptcy, junior-lien loans where the underlying first lien is 90 days or more past due, as well as loans that have not yet demonstrated a sustained period of payment performance following a TDR.

Nonperforming outstanding balances in the home equity portfolio decreased $120 million to $510 million at December 31, 2022, primarily driven by loan sales. Of the nonperforming home equity loans at December 31, 2022, $275 million, or 54 percent, were current on contractual payments. In addition, $167 million, or 33 percent, of nonperforming home equity loans were 180 days or more past due and had been written down to the estimated fair value of the collateral, less costs to sell. Accruing loans that were 30 days or more past due decreased $61 million in 2022.

Net recoveries decreased $29 million to $90 million in 2022 compared to 2021.

Of the $26.6 billion in total home equity portfolio outstandings at December 31, 2022, as shown in Table 23, 13 percent require interest-only payments. The outstanding balance of HELOCs that had reached the end of their draw period and entered the amortization period was $5.2 billion at December 31, 2022. The HELOCs that have entered the amortization period have experienced a higher percentage of early stage delinquencies and nonperforming status when compared to the HELOC portfolio as a whole. At December 31, 2022, $53 million, or one percent, of outstanding HELOCs that had entered the amortization period were accruing past due 30 days or more. In addition, at December 31, 2022, $354 million, or seven percent, were nonperforming.

For our interest-only HELOC portfolio, we do not actively track how many of our home equity customers pay only the minimum amount due on their home equity loans and lines; however, we can infer some of this information through a review of our HELOC portfolio that we service and is still in its revolving period. During 2022, 10 percent of these customers with an outstanding balance did not pay any principal on their HELOCs.

Table 24 presents outstandings, nonperforming balances and net recoveries by certain state concentrations for the home equity portfolio. In the New York area, the New York-Northern New Jersey-Long Island MSA made up 12 percent and 13 percent of the outstanding home equity portfolio at December 31, 2022 and 2021. The Los Angeles-Long Beach-Santa Ana MSA within California made up 11 percent and 10 percent of the outstanding home equity portfolio at December 31, 2022 and 2021.

Table 24 Home Equity State Concentrations

	Outstandings [1]		Nonperforming [1]			
	December 31				Net Charge-offs	
(Dollars in millions)	**2022**	2021	**2022**	2021	**2022**	2021
California	**$ 7,406**	$ 7,600	**$ 119**	$ 140	**$ (20)**	$ (40)
Florida	**2,743**	2,977	**63**	78	**(21)**	(21)
New Jersey	**2,047**	2,259	**53**	69	**(3)**	(4)
New York	**1,806**	2,072	**80**	96	**(4)**	(1)
Massachusetts	**1,347**	1,422	**23**	32	**(2)**	(3)
Other	**11,214**	11,605	**172**	215	**(40)**	(50)
Total home equity loan portfolio	**$ 26,563**	$ 27,935	**$ 510**	$ 630	**$ (90)**	$ (119)

[1] Outstandings and nonperforming loans exclude loans accounted for under the fair value option.

Credit Card

At December 31, 2022, 97 percent of the credit card portfolio was managed in *Consumer Banking* with the remainder in *GWIM*. Outstandings in the credit card portfolio increased $12.0 billion during 2022 to $93.4 billion primarily driven by increased purchase volumes, partially offset by the sale of a $1.6 billion affinity card loan portfolio. Net charge-offs decreased $389 million to $1.3 billion in 2022 compared to 2021, as loss rates remained near historic lows. In addition, the prior year included charge-offs associated with deferrals that expired in 2020. Credit card loans 30 days or more past due and still accruing interest increased $508 million, and 90 days or more past due and still accruing interest increased $230 million. Unused lines of credit for credit card increased to $370.1 billion

at December 31, 2022 from $361.2 billion at December 31, 2021.

Table 25 presents certain state concentrations for the credit card portfolio.

Table 25 Credit Card State Concentrations

	Outstandings		Accruing Past Due 90 Days or More		Net Charge-offs	
	December 31					
(Dollars in millions)	2022	2021	2022	2021	2022	2021
California	$ 15,363	$ 13,076	$ 126	$ 82	$ 232	$ 322
Florida	9,512	8,046	100	71	183	245
Texas	8,125	6,894	72	47	123	158
New York	5,381	4,725	56	35	99	135
Washington	4,844	4,080	21	13	36	39
Other	50,196	44,617	342	239	661	824
Total credit card portfolio	**$ 93,421**	$ 81,438	**$ 717**	$ 487	**$ 1,334**	$ 1,723

Direct/Indirect Consumer

At December 31, 2022, 49 percent of the direct/indirect portfolio was included in *Consumer Banking* (consumer auto and recreational vehicle lending) and 51 percent was included in *GWIM* (principally securities-based lending loans). Outstandings in the direct/indirect portfolio increased $2.7 billion in 2022 to $106.2 billion driven by growth in our auto portfolio.

Table 26 presents certain state concentrations for the direct/indirect consumer loan portfolio.

Table 26 Direct/Indirect State Concentrations

	Outstandings		Accruing Past Due 90 Days or More		Net Charge-offs	
	December 31					
(Dollars in millions)	2022	2021	2022	2021	2022	2021
California	$ 15,516	$ 15,061	$ 1	$ 2	$ 6	$ 3
Florida	13,783	13,352	—	1	4	1
Texas	9,837	9,505	—	2	3	2
New York	7,891	7,802	—	1	2	3
New Jersey	4,456	4,228	—	—	1	(3)
Other	54,753	53,612	1	5	2	(5)
Total direct/indirect loan portfolio	**$ 106,236**	$ 103,560	**$ 2**	$ 11	**$ 18**	$ 1

Other Consumer

Other consumer primarily consists of deposit overdraft balances. Net charge-offs increased $251 million in 2022 to $521 million, primarily driven by overdraft losses due to higher payment activity related to checking accounts.

Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

Table 27 presents nonperforming consumer loans, leases and foreclosed properties activity during 2022 and 2021. During 2022, nonperforming consumer loans decreased $235 million to $2.8 billion primarily due to decreases from loan sales, partially offset by increases from loans whose prior-period deferrals expired and were modified in TDRs during the first quarter of 2022.

At December 31, 2022, $605 million, or 22 percent, of nonperforming loans were 180 days or more past due and had been written down to their estimated property value less costs to sell. In addition, at December 31, 2022, $1.7 billion, or 61 percent, of nonperforming consumer loans were modified and are now current after successful trial periods, or are current loans classified as nonperforming loans in accordance with applicable policies.

Foreclosed properties increased $20 million in 2022 to $121 million. Nonperforming loans also include certain loans that have been modified in TDRs where economic concessions have been granted to borrowers experiencing financial difficulties.

Table 27 Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

(Dollars in millions)	2022	2021
Nonperforming loans and leases, January 1	**$ 2,989**	$ 2,725
Additions	**1,453**	2,006
Reductions:		
Paydowns and payoffs	**(535)**	(625)
Sales	**(402)**	(4)
Returns to performing status [1]	**(661)**	(1,037)
Charge-offs	**(56)**	(64)
Transfers to foreclosed properties	**(34)**	(12)
Total net additions/(reductions) to nonperforming loans and leases	**(235)**	264
Total nonperforming loans and leases, December 31	**2,754**	2,989
Foreclosed properties, December 31 [2]	**121**	101
Nonperforming consumer loans, leases and foreclosed properties, December 31	**$ 2,875**	$ 3,090
Nonperforming consumer loans and leases as a percentage of outstanding consumer loans and leases [3]	**0.60 %**	0.69 %
Nonperforming consumer loans, leases and foreclosed properties as a percentage of outstanding consumer loans, leases and foreclosed properties [3]	**0.63**	0.71

[1] Consumer loans may be returned to performing status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection.
[2] Foreclosed property balances do not include properties insured by certain government-guaranteed loans, principally FHA-insured, of $60 million and $52 million at December 31, 2022 and 2021.
[3] Outstanding consumer loans and leases exclude loans accounted for under the fair value option.

Table 28 presents TDRs for the consumer real estate portfolio. Performing TDR balances are excluded from nonperforming loans and leases in Table 27.

Table 28 Consumer Real Estate Troubled Debt Restructurings

	December 31, 2022			December 31, 2021		
(Dollars in millions)	Nonperforming	Performing	Total	Nonperforming	Performing	Total
Residential mortgage [1, 2]	**$ 1,726**	**$ 1,548**	**$ 3,274**	$ 1,498	$ 2,278	$ 3,776
Home equity [3]	**324**	**544**	**868**	254	652	906
Total consumer real estate troubled debt restructurings	**$ 2,050**	**$ 2,092**	**$ 4,142**	$ 1,752	$ 2,930	$ 4,682

[1] At December 31, 2022 and 2021, residential mortgage TDRs deemed collateral dependent totaled $1.8 billion and $1.6 billion, and included $1.6 billion and $1.4 billion of loans classified as nonperforming and $183 million and $279 million of loans classified as performing.
[2] At December 31, 2022 and 2021, residential mortgage performing TDRs included $1.1 billion and $1.2 billion of loans that were fully-insured.
[3] At December 31, 2022 and 2021, home equity TDRs deemed collateral dependent totaled $411 million and $370 million, and included $293 million and $222 million of loans classified as nonperforming and $118 million and $148 million of loans classified as performing.

In addition to modifying consumer real estate loans, we work with customers who are experiencing financial difficulty by modifying credit card and other consumer loans. Credit card and other consumer loan modifications generally involve a reduction in the customer's interest rate on the account and placing the customer on a fixed payment plan not exceeding 60 months.

Modifications of credit card and other consumer loans are made through programs utilizing direct customer contact, but may also utilize external programs. At December 31, 2022 and 2021, our credit card and other consumer TDR portfolio was $624 million and $672 million, of which $540 million and $599 million were current or less than 30 days past due under the modified terms.

Commercial Portfolio Credit Risk Management

Credit risk management for the commercial portfolio begins with an assessment of the credit risk profile of the borrower or counterparty based on an analysis of its financial position. As part of the overall credit risk assessment, our commercial credit exposures are assigned a risk rating and are subject to approval based on defined credit approval standards. Subsequent to loan origination, risk ratings are monitored on an ongoing basis, and if necessary, adjusted to reflect changes in the financial condition, cash flow, risk profile or outlook of a borrower or counterparty. In making credit decisions, we consider risk rating, collateral, country, industry and single-name concentration limits while also balancing these considerations with the total borrower or counterparty relationship. We use a variety of tools to continuously monitor the ability of a borrower or counterparty to perform under its obligations. We use risk rating aggregations to measure and evaluate concentrations within portfolios. In addition, risk ratings are a factor in determining the level of allocated capital and the allowance for credit losses.

As part of our ongoing risk mitigation initiatives, we attempt to work with clients experiencing financial difficulty to modify their loans to terms that better align with their current ability to pay. In situations where an economic concession has been granted to a borrower experiencing financial difficulty, we identify these loans as TDRs. For more information on our accounting policies regarding delinquencies, nonperforming status and net charge-offs for the commercial portfolio, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Management of Commercial Credit Risk Concentrations

Commercial credit risk is evaluated and managed with the goal that concentrations of credit exposure continue to be aligned with our risk appetite. We review, measure and manage concentrations of credit exposure by industry, product, geography, customer relationship and loan size. We also review, measure and manage commercial real estate loans by geographic location and property type. In addition, within our non-U.S. portfolio, we evaluate exposures by region and by country. Tables 33, 36 and 39 summarize our concentrations. We also utilize syndications of exposure to third parties, loan sales, hedging and other risk mitigation techniques to manage the size and risk profile of the commercial credit portfolio. For more information on our industry concentrations, see Table 36

and Commercial Portfolio Credit Risk Management – Industry Concentrations on page 68.

We account for certain large corporate loans and loan commitments, including issued but unfunded letters of credit which are considered utilized for credit risk management purposes, that exceed our single-name credit risk concentration guidelines under the fair value option. Lending commitments, both funded and unfunded, are actively managed and monitored, and as appropriate, credit risk for these lending relationships may be mitigated through the use of credit derivatives, with our credit view and market perspectives determining the size and timing of the hedging activity. In addition, we purchase credit protection to cover the funded portion as well as the unfunded portion of certain other credit exposures. To lessen the cost of obtaining our desired credit protection levels, credit exposure may be added within an industry, borrower or counterparty group by selling protection. These credit derivatives do not meet the requirements for treatment as accounting hedges. They are carried at fair value with changes in fair value recorded in other income.

In addition, we are a member of various securities and derivative exchanges and clearinghouses, both in the U.S. and other countries. As a member, we may be required to pay a pro-rata share of the losses incurred by some of these organizations as a result of another member default and under other loss scenarios. For more information, see *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Commercial Credit Portfolio

During 2022, commercial credit quality improved as charge-offs, nonperforming commercial loans and reservable criticized utilized exposure declined. Due to the ongoing Russia/Ukraine conflict, all direct exposure to Russian counterparties was downgraded and reported as reservable criticized exposure, and expected credit losses (ECL) have been incorporated into our estimate of the allowance for credit losses. Outstanding commercial loans and leases increased $45.9 billion during 2022 due to growth in commercial and industrial, primarily in *Global Banking*. This increase was partially offset by lower U.S. small business commercial loans due to repayments of PPP loans by the Small Business Administration (SBA) under the terms of the program.

Credit quality of commercial real estate borrowers generally improved from 2021 as pandemic-impacted sectors are recovering. However, many commercial real estate markets, while improving, are still experiencing disruptions in demand, supply chain challenges, tenant difficulties and challenging capital markets. Demand for office space continues to be uncertain as companies evaluate space needs with employment models that utilize a mix of remote and conventional office use.

The commercial allowance for loan and lease losses remained relatively unchanged at $5.4 billion at December 31, 2022, as loan growth and a dampened macroeconomic outlook were offset by asset quality improvement and a reserve release for reduced pandemic uncertainties. For more information, see Allowance for Credit Losses on page 73.

Total commercial utilized credit exposure increased $51.3 billion during 2022 to $704.9 billion primarily driven by higher loans and leases and derivative assets. The utilization rate for loans and leases, standby letters of credit (SBLCs) and financial guarantees, and commercial letters of credit, in the aggregate, was 56 percent at both December 31, 2022 and 2021.

Table 29 presents commercial credit exposure by type for utilized, unfunded and total binding committed credit exposure. Commercial utilized credit exposure includes SBLCs and financial guarantees and commercial letters of credit that have been issued and for which we are legally bound to advance funds under prescribed conditions during a specified time period, and excludes exposure related to trading account assets. Although funds have not yet been advanced, these exposure types are considered utilized for credit risk management purposes.

Table 29 Commercial Credit Exposure by Type

	Commercial Utilized [1]		Commercial Unfunded [2, 3, 4]		Total Commercial Committed	
	December 31					
(Dollars in millions)	**2022**	2021	**2022**	2021	**2022**	2021
Loans and leases	**$ 589,362**	$ 543,420	**$ 487,772**	$ 454,256	**$ 1,077,134**	$ 997,676
Derivative assets [5]	**48,642**	35,344	**—**	—	**48,642**	35,344
Standby letters of credit and financial guarantees	**33,376**	34,389	**1,266**	639	**34,642**	35,028
Debt securities and other investments	**20,195**	19,427	**2,551**	4,638	**22,746**	24,065
Loans held-for-sale	**6,112**	13,185	**3,729**	16,581	**9,841**	29,766
Operating leases	**5,509**	5,935	**—**	—	**5,509**	5,935
Commercial letters of credit	**973**	1,176	**28**	247	**1,001**	1,423
Other	**698**	652	**—**	—	**698**	652
Total	**$ 704,867**	$ 653,528	**$ 495,346**	$ 476,361	**$ 1,200,213**	$ 1,129,889

(1) Commercial utilized exposure includes loans of $5.4 billion and $7.2 billion accounted for under the fair value option at December 31, 2022 and 2021.
(2) Commercial unfunded exposure includes commitments accounted for under the fair value option with a notional amount of $3.0 billion and $4.8 billion at December 31, 2022 and 2021.
(3) Excludes unused business card lines, which are not legally binding.
(4) Includes the notional amount of unfunded legally binding lending commitments, net of amounts distributed (i.e., syndicated or participated) to other financial institutions. The distributed amounts were $10.4 billion and $10.7 billion at December 31, 2022 and 2021.
(5) Derivative assets are carried at fair value, reflect the effects of legally enforceable master netting agreements and have been reduced by cash collateral of $33.8 billion and $30.8 billion at December 31, 2022 and 2021. Not reflected in utilized and committed exposure is additional non-cash derivative collateral held of $51.6 billion and $44.8 billion at December 31, 2022 and 2021, which consists primarily of other marketable securities.

Nonperforming commercial loans decreased $524 million across all product types. Table 30 presents our commercial loans and leases portfolio and related credit quality information at December 31, 2022 and 2021.

Table 30 Commercial Credit Quality

	Outstandings		Nonperforming		Accruing Past Due 90 Days or More	
	December 31					
(Dollars in millions)	**2022**	2021	**2022**	2021	**2022**	2021
Commercial and industrial:						
U.S. commercial	**$ 358,481**	$ 325,936	**$ 553**	$ 825	**$ 190**	$ 171
Non-U.S. commercial	**124,479**	113,266	**212**	268	**25**	19
Total commercial and industrial	**482,960**	439,202	**765**	1,093	**215**	190
Commercial real estate	**69,766**	63,009	**271**	382	**46**	40
Commercial lease financing	**13,644**	14,825	**4**	80	**8**	8
	566,370	517,036	**1,040**	1,555	**269**	238
U.S. small business commercial [1]	**17,560**	19,183	**14**	23	**355**	87
Commercial loans excluding loans accounted for under the fair value option	**$ 583,930**	$ 536,219	**$ 1,054**	$ 1,578	**$ 624**	$ 325
Loans accounted for under the fair value option [2]	**5,432**	7,201				
Total commercial loans and leases	**$ 589,362**	$ 543,420				

[1] Includes card-related products.
[2] Commercial loans accounted for under the fair value option includes U.S. commercial of $2.9 billion and $4.6 billion and non-U.S. commercial of $2.5 billion and $2.6 billion at December 31, 2022 and 2021. For more information on the fair value option, see *Note 21 – Fair Value Option* to the Consolidated Financial Statements.

Table 31 presents net charge-offs and related ratios for our commercial loans and leases for 2022 and 2021.

Table 31 Commercial Net Charge-offs and Related Ratios

	Net Charge-offs		Net Charge-off Ratios [1]	
(Dollars in millions)	**2022**	2021	**2022**	2021
Commercial and industrial:				
U.S. commercial	**$ 71**	$ (23)	**0.02 %**	(0.01%)
Non-U.S. commercial	**21**	35	**0.02**	0.04
Total commercial and industrial	**92**	12	**0.02**	—
Commercial real estate	**66**	34	**0.10**	0.06
Commercial lease financing	**5**	(1)	**0.03**	—
	163	45	**0.03**	0.01
U.S. small business commercial	**154**	351	**0.86**	1.19
Total commercial	**$ 317**	$ 396	**0.06**	0.08

[1] Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans and leases, excluding loans accounted for under the fair value option.

Table 32 presents commercial reservable criticized utilized exposure by loan type. Criticized exposure corresponds to the Special Mention, Substandard and Doubtful asset categories as defined by regulatory authorities. Total commercial reservable criticized utilized exposure decreased $3.1 billion during 2022, which was broad-based across industries. At December 31, 2022 and 2021, 88 percent and 87 percent of commercial reservable criticized utilized exposure was secured.

Table 32 Commercial Reservable Criticized Utilized Exposure [1, 2]

	December 31			
(Dollars in millions)	**2022**		2021	
Commercial and industrial:				
U.S. commercial	**$ 10,724**	**2.78 %**	$ 11,327	3.20%
Non-U.S. commercial	**2,665**	**2.04**	2,582	2.17
Total commercial and industrial	**13,389**	**2.59**	13,909	2.94
Commercial real estate	**5,201**	**7.30**	7,572	11.72
Commercial lease financing	**240**	**1.76**	387	2.61
	18,830	**3.13**	21,868	3.96
U.S. small business commercial	**444**	**2.53**	513	2.67
Total commercial reservable criticized utilized exposure	**$ 19,274**	**3.12**	$ 22,381	3.91

[1] Total commercial reservable criticized utilized exposure includes loans and leases of $18.5 billion and $21.2 billion and commercial letters of credit of $817 million and $1.2 billion at December 31, 2022 and 2021.
[2] Percentages are calculated as commercial reservable criticized utilized exposure divided by total commercial reservable utilized exposure for each exposure category.

Commercial and Industrial

Commercial and industrial loans include U.S. commercial and non-U.S. commercial portfolios.

U.S. Commercial

At December 31, 2022, 63 percent of the U.S. commercial loan portfolio, excluding small business, was managed in *Global Banking,* 21 percent in *Global Markets*, 15 percent in *GWIM* (loans that provide financing for asset purchases, business investments and other liquidity needs for high net worth clients) and the remainder primarily in *Consumer Banking*. U.S. commercial loans increased $32.5 billion, or 10 percent, during

2022 primarily driven by *Global Banking*. Reservable criticized utilized exposure decreased $603 million, or five percent, driven by decreases across a broad range of industries.

Non-U.S. Commercial

At December 31, 2022, 64 percent of the non-U.S. commercial loan portfolio was managed in *Global Banking,* 35 percent in *Global Markets* and the remainder in *GWIM*. Non-U.S. commercial loans increased $11.2 billion, or 10 percent, during 2022 due to loan growth in *Global Markets*. Reservable criticized utilized exposure increased $83 million, or three percent, due to downgrades for direct exposure to Russian counterparties. For information on the non-U.S. commercial portfolio, see Non-U.S. Portfolio on page 70. For more information on the Russia/ Ukraine conflict, see Recent Developments on page 27.

Commercial Real Estate

Commercial real estate primarily includes commercial loans secured by non-owner-occupied real estate and is dependent on the sale or lease of the real estate as the primary source of repayment. Outstanding loans increased $6.8 billion, or 11 percent, during 2022 to $69.8 billion due to new originations outpacing paydowns and increased utilizations under existing credit facilities. Reservable criticized utilized exposure decreased $2.4 billion, or 31 percent, primarily driven by Hotels due to improving vacancy rates and reduced travel restrictions. The portfolio remains diversified across property types and geographic regions. California represented the largest state concentration at 19 percent and 21 percent of the commercial real estate portfolio at December 31, 2022 and 2021. The commercial real estate portfolio is predominantly managed in *Global Banking* and consists of loans made primarily to public and private developers, and commercial real estate firms.

During 2022, we continued to see low default rates and varying degrees of improvement in certain geographic regions and property types of the portfolio. We use a number of proactive risk mitigation initiatives to reduce adversely rated exposure in the commercial real estate portfolio, including transfers of deteriorating exposures for management by independent special asset officers and the pursuit of loan restructurings or asset sales to achieve the best results for our customers and the Corporation.

Table 33 presents outstanding commercial real estate loans by geographic region, based on the geographic location of the collateral, and by property type.

Table 33 Outstanding Commercial Real Estate Loans

	December 31	
(Dollars in millions)	2022	2021
By Geographic Region		
Northeast	**$ 15,601**	$ 14,318
California	**13,360**	13,145
Southwest	**8,723**	7,510
Southeast	**7,713**	6,758
Florida	**5,374**	4,367
Midwest	**3,419**	3,221
Illinois	**3,327**	2,878
Midsouth	**2,716**	2,289
Northwest	**1,959**	1,709
Non-U.S.	**5,518**	4,760
Other	**2,056**	2,054
Total outstanding commercial real estate loans	**$ 69,766**	$ 63,009
By Property Type		
Non-residential		
Office	**$ 18,230**	$ 18,309
Industrial / Warehouse	**13,775**	10,749
Multi-family rental	**10,412**	8,173
Shopping centers /Retail	**5,830**	6,502
Hotel / Motels	**5,696**	5,932
Unsecured	**3,195**	3,178
Multi-use	**2,403**	1,835
Other	**9,046**	7,238
Total non-residential	**68,587**	61,916
Residential	**1,179**	1,093
Total outstanding commercial real estate loans	**$ 69,766**	$ 63,009

U.S. Small Business Commercial

The U.S. small business commercial loan portfolio is comprised of small business card loans and small business loans primarily managed in *Consumer Banking,* and included $1.0 billion and $4.7 billion of PPP loans outstanding at December 31, 2022 and 2021. The decline of $3.7 billion in PPP loans during 2022 was primarily due to repayment of the loans by the SBA under the terms of the program. Excluding PPP, credit card-related products were 53 percent and 50 percent of the U.S. small business commercial portfolio at December 31, 2022 and 2021 and represented all of the net charge-offs in 2022 compared to 95 percent in 2021. The increase of $268 million in accruing past due 90 days or more in 2022 was driven by PPP loans, which are fully guaranteed by the SBA.

Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity

Table 34 presents the nonperforming commercial loans, leases and foreclosed properties activity during 2022 and 2021. Nonperforming loans do not include loans accounted for under the fair value option. During 2022, nonperforming commercial loans and leases decreased $524 million to $1.1 billion. At December 31, 2022, 97 percent of commercial nonperforming loans, leases and foreclosed properties were secured, and 65 percent were contractually current. Commercial nonperforming loans were carried at 85 percent of their unpaid principal balance, as the carrying value of these loans has been reduced to the estimated collateral value less costs to sell.

Table 34 Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity [1, 2]

(Dollars in millions)	2022	2021
Nonperforming loans and leases, January 1	**$ 1,578**	$ 2,227
Additions	**952**	1,622
Reductions:		
Paydowns	**(825)**	(1,163)
Sales	**(57)**	(199)
Returns to performing status [3]	**(334)**	(264)
Charge-offs	**(221)**	(254)
Transfers to loans held-for-sale	**(39)**	(391)
Total net reductions to nonperforming loans and leases	**(524)**	(649)
Total nonperforming loans and leases, December 31	**1,054**	1,578
Foreclosed properties, December 31	**49**	29
Nonperforming commercial loans, leases and foreclosed properties, December 31	**$ 1,103**	$ 1,607
Nonperforming commercial loans and leases as a percentage of outstanding commercial loans and leases [4]	**0.18 %**	0.29 %
Nonperforming commercial loans, leases and foreclosed properties as a percentage of outstanding commercial loans, leases and foreclosed properties [4]	**0.19**	0.30

(1) Balances do not include nonperforming loans held-for-sale of $219 million and $264 million at December 31, 2022 and 2021.
(2) Includes U.S. small business commercial activity. Small business card loans are excluded as they are not classified as nonperforming.
(3) Commercial loans and leases may be returned to performing status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection. TDRs are generally classified as performing after a sustained period of demonstrated payment performance.
(4) Outstanding commercial loans exclude loans accounted for under the fair value option.

Table 35 presents our commercial TDRs by product type and performing status. U.S. small business commercial TDRs are comprised of renegotiated small business card loans and small business loans. The renegotiated small business card loans are not classified as nonperforming as they are charged off no later than the end of the month in which the loan becomes 180 days past due. Commercial TDRs increased $957 million, or 50 percent, during 2022 primarily due to commercial real estate loans that were modified as TDRs during the first half of the year.

Table 35 Commercial Troubled Debt Restructurings

	December 31, 2022			December 31, 2021		
(Dollars in millions)	Nonperforming	Performing	Total	Nonperforming	Performing	Total
Commercial and industrial:						
U.S. commercial	**$ 305**	**$ 985**	**$ 1,290**	$ 359	$ 685	$ 1,044
Non-U.S. commercial	**69**	**238**	**307**	72	8	80
Total commercial and industrial	**374**	**1,223**	**1,597**	431	693	1,124
Commercial real estate	**59**	**1,131**	**1,190**	244	437	681
Commercial lease financing	**3**	**16**	**19**	50	7	57
	436	**2,370**	**2,806**	725	1,137	1,862
U.S. small business commercial	**—**	**51**	**51**	—	38	38
Total commercial troubled debt restructurings	**$ 436**	**$ 2,421**	**$ 2,857**	$ 725	$ 1,175	$ 1,900

Industry Concentrations

Table 36 presents commercial committed and utilized credit exposure by industry. Our commercial credit exposure is diversified across a broad range of industries. Total commercial committed exposure increased $70.3 billion, or six percent, during 2022 to $1.2 trillion. The increase in commercial committed exposure was concentrated in Asset managers and funds, Global commercial banks and Pharmaceuticals and biotechnology.

Industry limits are used internally to manage industry concentrations and are based on committed exposure that is determined on an industry-by-industry basis. A risk management framework is in place to set and approve industry limits as well as to provide ongoing monitoring.

Asset managers and funds, our largest industry concentration with committed exposure of $165.1 billion, increased $28.2 billion, or 21 percent, during 2022 primarily driven by investment-grade exposures.

Real estate, our second largest industry concentration with committed exposure of $99.7 billion, increased $3.5 billion, or four percent, during 2022. For more information on the commercial real estate and related portfolios, see Commercial Portfolio Credit Risk Management – Commercial Real Estate on page 67.

Capital goods, our third largest industry concentration with committed exposure of $87.3 billion, increased $3.0 billion, or four percent, during 2022. The increase in committed exposure occurred primarily as a result of increases in the Electrical equipment and Trading companies and distributors, partially offset by a decrease in Building products.

While the U.S. and global economies have shown signs of relief from the pandemic, uncertainty remains as a result of

geopolitical and inflationary pressures, and a number of industries will likely continue to be adversely impacted due to these conditions. We continue to monitor all industries, particularly higher risk industries that are experiencing or could experience a more significant impact to their financial condition.

Table 36 Commercial Credit Exposure by Industry [1]

	Commercial Utilized		Total Commercial Committed [2]	
	December 31			
(Dollars in millions)	2022	2021	2022	2021
Asset managers & funds	$ 106,842	$ 89,786	$ 165,087	$ 136,914
Real estate [3]	72,180	69,384	99,722	96,202
Capital goods	45,580	42,784	87,314	84,293
Finance companies	55,248	59,327	79,546	86,009
Healthcare equipment and services	33,554	32,003	58,761	58,195
Materials	26,304	25,133	55,589	53,652
Retailing	24,785	24,514	53,714	50,816
Government & public education	34,861	37,597	48,134	50,066
Food, beverage and tobacco	23,232	21,584	47,486	45,419
Consumer services	26,980	28,172	47,372	48,052
Individuals and trusts	34,897	29,752	45,572	39,869
Commercial services and supplies	23,628	22,390	41,596	42,451
Utilities	20,292	17,082	40,164	36,855
Energy	15,132	14,217	36,043	34,136
Transportation	22,273	21,079	33,858	32,015
Technology hardware and equipment	11,441	10,159	29,825	26,910
Global commercial banks	27,217	20,062	29,293	21,390
Media	14,781	12,495	28,216	26,318
Pharmaceuticals and biotechnology	7,547	5,608	26,208	19,439
Software and services	12,961	10,663	25,633	27,643
Consumer durables and apparel	10,009	9,740	21,389	21,226
Vehicle dealers	12,909	11,030	20,638	15,678
Insurance	10,224	5,743	19,444	14,323
Telecommunication services	9,679	10,056	17,349	21,270
Automobiles and components	8,774	9,236	16,911	17,052
Food and staples retailing	7,157	6,902	11,908	12,226
Financial markets infrastructure (clearinghouses)	3,913	3,876	8,752	6,076
Religious and social organizations	2,467	3,154	4,689	5,394
Total commercial credit exposure by industry	$ 704,867	$ 653,528	$ 1,200,213	$ 1,129,889

(1) Includes U.S. small business commercial exposure.
(2) Includes the notional amount of unfunded legally binding lending commitments, net of amounts distributed (i.e., syndicated or participated) to other financial institutions. The distributed amounts were $10.4 billion and $10.7 billion at December 31, 2022 and 2021.
(3) Industries are viewed from a variety of perspectives to best isolate the perceived risks. For purposes of this table, the real estate industry is defined based on the primary business activity of the borrowers or counterparties using operating cash flows and primary source of repayment as key factors.

Risk Mitigation

We purchase credit protection to cover the funded portion as well as the unfunded portion of certain credit exposures. To lower the cost of obtaining our desired credit protection levels, we may add credit exposure within an industry, borrower or counterparty group by selling protection.

At December 31, 2022 and 2021, net notional credit default protection purchased in our credit derivatives portfolio to hedge our funded and unfunded exposures for which we elected the fair value option, as well as certain other credit exposures, was $9.0 billion and $2.6 billion. We recorded net losses of $37 million in 2022 compared to net losses $91 million in 2021. The gains and losses on these instruments were largely offset by gains and losses on the related exposures. The Value-at-Risk (VaR) results for these exposures are included in the fair value option portfolio information in Table 43. For more information, see Trading Risk Management on page 76.

Tables 37 and 38 present the maturity profiles and the credit exposure debt ratings of the net credit default protection portfolio at December 31, 2022 and 2021.

Table 37 Net Credit Default Protection by Maturity

	December 31	
	2022	2021
Less than or equal to one year	14 %	34 %
Greater than one year and less than or equal to five years	85	62
Greater than five years	1	4
Total net credit default protection	100 %	100 %

Table 38 Net Credit Default Protection by Credit Exposure Debt Rating

(Dollars in millions)	Net Notional [1]	Percent of Total	Net Notional [1]	Percent of Total
	December 31			
	2022		2021	
Ratings [2, 3]				
AAA	**$ (379)**	**4.0 %**	$ —	— %
AA	**(867)**	**10.0**	—	—
A	**(3,257)**	**36.0**	(350)	13.4
BBB	**(2,476)**	**28.0**	(710)	27.1
BB	**(1,049)**	**12.0**	(809)	30.9
B	**(676)**	**7.0**	(659)	25.2
CCC and below	**(93)**	**1.0**	(35)	1.3
NR [4]	**(182)**	**2.0**	(55)	2.1
Total net credit default protection	**$ (8,979)**	**100.0 %**	$ (2,618)	100.0 %

[1] Represents net credit default protection purchased.
[2] Ratings are refreshed on a quarterly basis.
[3] Ratings of BBB- or higher are considered to meet the definition of investment grade.
[4] NR is comprised of index positions held and any names that have not been rated.

In addition to our net notional credit default protection purchased to cover the funded and unfunded portion of certain credit exposures, credit derivatives are used for market-making activities for clients and establishing positions intended to profit from directional or relative value changes. We execute the majority of our credit derivative trades in the OTC market with large, multinational financial institutions, including broker-dealers and, to a lesser degree, with a variety of other investors. Because these transactions are executed in the OTC market, we are subject to settlement risk. We are also subject to credit risk in the event that these counterparties fail to perform under the terms of these contracts. In order to properly reflect counterparty credit risk, we record counterparty credit risk valuation adjustments on certain derivative assets, including our purchased credit default protection. In most cases, credit derivative transactions are executed on a daily margin basis. Therefore, events such as a credit downgrade, depending on the ultimate rating level, or a breach of credit covenants would typically require an increase in the amount of collateral required by the counterparty, where applicable, and/or allow us to take additional protective measures such as early termination of all trades. For more information on credit derivatives and counterparty credit risk valuation adjustments, see *Note 3 – Derivatives* to the Consolidated Financial Statements.

Non-U.S. Portfolio

Our non-U.S. credit and trading portfolios are subject to country risk. We define country risk as the risk of loss from unfavorable economic and political conditions, currency fluctuations, social instability and changes in government policies. A risk management framework is in place to measure, monitor and manage non-U.S. risk and exposures. In addition to the direct risk of doing business in a country, we also are exposed to indirect country risks (e.g., related to the collateral received on secured financing transactions or related to client clearing activities). These indirect exposures are managed in the normal course of business through credit, market and operational risk governance rather than through country risk governance.

Table 39 presents our 20 largest non-U.S. country exposures at December 31, 2022. These exposures accounted for 89 percent of our total non-U.S. exposure at both December 31, 2022 and 2021. Net country exposure for these 20 countries increased $24.0 billion in 2022 primarily driven by increases in Germany, Japan, Ireland, India and Switzerland, partially offset by decreases in China, Belgium, Australia and Singapore.

Non-U.S. exposure is presented on an internal risk management basis and includes sovereign and non-sovereign credit exposure, securities and other investments issued by or domiciled in countries other than the U.S.

Funded loans and loan equivalents include loans, leases, and other extensions of credit and funds, including letters of credit and due from placements. Unfunded commitments are the undrawn portion of legally binding commitments related to loans and loan equivalents. Net counterparty exposure includes the fair value of derivatives, including the counterparty risk associated with credit default swaps (CDS), and secured financing transactions. Securities and other investments are carried at fair value and long securities exposures are netted against short exposures with the same underlying issuer to, but not below, zero. Net country exposure represents country exposure less hedges and credit default protection purchased, net of credit default protection sold.

Table 39 Top 20 Non-U.S. Countries Exposure

(Dollars in millions)	Funded Loans and Loan Equivalents	Unfunded Loan Commitments	Net Counterparty Exposure	Securities/ Other Investments	Country Exposure at December 31 2022	Hedges and Credit Default Protection	**Net Country Exposure at December 31 2022**	Increase (Decrease) from December 31 2021
United Kingdom	$ 29,965	$ 16,601	$ 7,243	$ 2,570	$ 56,379	$ (1,034)	**$ 55,345**	$ 376
Germany	32,248	9,431	2,190	2,742	46,611	(885)	**45,726**	11,901
France	13,888	8,064	2,023	3,604	27,579	(986)	**26,593**	1,686
Canada	10,992	10,094	1,472	3,383	25,941	(368)	**25,573**	(738)
Japan	19,239	1,806	1,366	1,502	23,913	(826)	**23,087**	5,825
Australia	14,412	4,013	568	1,510	20,503	(286)	**20,217**	(1,087)
Brazil	6,175	1,413	741	4,199	12,528	(28)	**12,500**	(250)
China	6,489	294	1,378	2,932	11,093	(285)	**10,808**	(1,774)
India	6,805	589	614	2,841	10,849	(80)	**10,769**	2,138
Switzerland	7,039	3,063	469	438	11,009	(321)	**10,688**	2,113
Singapore	4,017	627	126	4,874	9,644	(37)	**9,607**	(1,058)
Netherlands	3,169	4,892	617	1,402	10,080	(797)	**9,283**	(313)
South Korea	6,103	927	504	1,664	9,198	(72)	**9,126**	974
Ireland	7,678	1,157	151	230	9,216	(126)	**9,090**	3,551
Mexico	4,444	1,753	514	743	7,454	(62)	**7,392**	930
Hong Kong	5,123	523	466	1,181	7,293	(22)	**7,271**	(56)
Spain	2,433	2,170	398	1,067	6,068	(227)	**5,841**	(79)
Italy	3,883	1,777	184	426	6,270	(602)	**5,668**	464
Saudi Arabia	2,428	1,465	219	15	4,127	(109)	**4,018**	545
Belgium	1,433	1,489	184	910	4,016	(153)	**3,863**	(1,168)
Total top 20 non-U.S. countries exposure	$ 187,963	$ 72,148	$ 21,427	$ 38,233	$ 319,771	$ (7,306)	**$ 312,465**	$ 23,980

Our largest non-U.S. country exposure at December 31, 2022 was the United Kingdom with net exposure of $55.3 billion, which represents an increase of $376 million from December 31, 2021. The increase was primarily driven by net counterparty exposure with financial institutions, partially offset by a reduction in deposits with the central bank. Our second largest non-U.S. country exposure was Germany with net exposure of $45.7 billion at December 31, 2022, an increase of $11.9 billion from December 31, 2021. The increase was driven by higher deposits with the central bank and increased exposure with financial institutions and corporates.

Loan and Lease Contractual Maturities

Table 40 disaggregates total outstanding loans and leases by remaining scheduled principal due dates and interest rates. The amounts provided do not reflect prepayment assumptions or hedging activities related to the loan portfolio. For information on the asset sensitivity of our total banking book balance sheet, see Interest Rate Risk Management for the Banking Book on page 79.

Table 40 Loan and Lease Contractual Maturities [1]

(Dollars in millions)	December 31, 2022 Due in One Year or Less	Due After One Year Through Five Years	Due After Five Years Through 15 Years	Due After 15 Years	Total
Residential mortgage	$ 5,660	$ 32,546	$ 94,544	$ 96,991	**$ 229,741**
Home equity	251	1,195	5,076	20,309	**26,831**
Credit card	93,421	—	—	—	**93,421**
Direct/Indirect consumer	65,877	35,066	4,464	829	**106,236**
Other consumer	156	—	—	—	**156**
Total consumer loans	**165,365**	**68,807**	**104,084**	**118,129**	**456,385**
U.S. commercial	97,153	242,313	20,343	1,584	**361,393**
Non-U.S. commercial	49,662	52,826	22,436	2,075	**126,999**
Commercial real estate	19,199	48,051	1,650	866	**69,766**
Commercial lease financing	2,737	8,214	1,026	1,667	**13,644**
U.S. small business commercial	10,615	4,474	2,407	64	**17,560**
Total commercial loans	**179,366**	**355,878**	**47,862**	**6,256**	**589,362**
Total loans and leases	**$ 344,731**	**$ 424,685**	**$ 151,946**	**$ 124,385**	**$ 1,045,747**

(Dollars in millions)	Amount due in one year or less at: Variable Interest Rates	Fixed Interest Rates	Amount due after one year at: Variable Interest Rates	Fixed Interest Rates	Total
Residential mortgage	$ 1,007	$ 4,653	$ 83,441	$ 140,640	**$ 229,741**
Home equity	203	48	22,438	4,142	**26,831**
Credit card	88,113	5,308	—	—	**93,421**
Direct/Indirect consumer	47,240	18,637	2,857	37,502	**106,236**
Other consumer	—	156	—	—	**156**
Total consumer loans	**136,563**	**28,802**	**108,736**	**182,284**	**456,385**
U.S. commercial	73,593	23,560	223,099	41,141	**361,393**
Non-U.S. commercial	42,692	6,970	75,355	1,982	**126,999**
Commercial real estate	18,361	838	49,247	1,320	**69,766**
Commercial lease financing	229	2,508	3,696	7,211	**13,644**
U.S. small business commercial	6,363	4,252	109	6,836	**17,560**
Total commercial loans	**141,238**	**38,128**	**351,506**	**58,490**	**589,362**
Total loans and leases	**$ 277,801**	**$ 66,930**	**$ 460,242**	**$ 240,774**	**$ 1,045,747**

[1] Includes loans accounted for under the fair value option.

Allowance for Credit Losses

The allowance for credit losses increased $379 million from December 31, 2021 to $14.2 billion at December 31, 2022, which included a $202 million reserve increase related to the consumer portfolio and a $177 million reserve increase related to the commercial portfolio. The increase in the allowance was primarily driven by loan growth and a dampened macroeconomic outlook, partially offset by a reserve release for reduced pandemic uncertainties.

Table 41 presents an allocation of the allowance for credit losses by product type at December 31, 2022 and 2021.

Table 41 Allocation of the Allowance for Credit Losses by Product Type

(Dollars in millions)	Amount	Percent of Total	Percent of Loans and Leases Outstanding [1]	Amount	Percent of Total	Percent of Loans and Leases Outstanding [1]
	December 31, 2022			December 31, 2021		
Allowance for loan and lease losses						
Residential mortgage	$ 328	2.59 %	0.14 %	$ 351	2.83 %	0.16 %
Home equity	92	0.73	0.35	206	1.66	0.74
Credit card	6,136	48.38	6.57	5,907	47.70	7.25
Direct/Indirect consumer	585	4.61	0.55	523	4.22	0.51
Other consumer	96	0.76	n/m	46	0.37	n/m
Total consumer	7,237	57.07	1.59	7,033	56.78	1.62
U.S. commercial [2]	3,007	23.71	0.80	3,019	24.37	0.87
Non-U.S. commercial	1,194	9.41	0.96	975	7.87	0.86
Commercial real estate	1,192	9.40	1.71	1,292	10.43	2.05
Commercial lease financing	52	0.41	0.38	68	0.55	0.46
Total commercial	5,445	42.93	0.93	5,354	43.22	1.00
Allowance for loan and lease losses	12,682	100.00 %	1.22	12,387	100.00 %	1.28
Reserve for unfunded lending commitments	1,540			1,456		
Allowance for credit losses	$ 14,222			$ 13,843		

[1] Ratios are calculated as allowance for loan and lease losses as a percentage of loans and leases outstanding excluding loans accounted for under the fair value option.
[2] Includes allowance for loan and lease losses for U.S. small business commercial loans of $844 million and $1.2 billion at December 31, 2022 and 2021.
n/m = not meaningful

Net charge-offs for both 2022 and 2021 were $2.2 billion as credit card losses, which remained near historic lows, were partially offset by higher overdrafts charged off in other consumer due to payment activity related to checking accounts. The provision for credit losses increased $7.1 billion to an expense of $2.5 billion during 2022 compared to 2021. The provision for credit losses in 2022 was primarily driven by loan growth and a dampened macroeconomic outlook, partially offset by a reserve release for reduced pandemic uncertainties. The provision for credit losses for the consumer portfolio, including unfunded lending commitments, increased $3.2 billion to an expense of $2.0 billion during 2022 compared to 2021. The provision for credit losses for the commercial portfolio, including unfunded lending commitments, increased $3.9 billion to an expense of $495 million for 2022 compared to 2021.

Table 42 presents a rollforward of the allowance for credit losses, including certain loan and allowance ratios for 2022 and 2021. For more information on the Corporation's credit loss accounting policies and activity related to the allowance for credit losses, see *Note 1 – Summary of Significant Accounting Principles* and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

Table 42 Allowance for Credit Losses

(Dollars in millions)	2022	2021
Allowance for loan and lease losses, January 1	**$ 12,387**	$ 18,802
Loans and leases charged off		
Residential mortgage	**(161)**	(34)
Home equity	**(45)**	(44)
Credit card	**(1,985)**	(2,411)
Direct/Indirect consumer	**(232)**	(297)
Other consumer	**(538)**	(292)
Total consumer charge-offs	**(2,961)**	(3,078)
U.S. commercial [1]	**(354)**	(626)
Non-U.S. commercial	**(41)**	(47)
Commercial real estate	**(75)**	(46)
Commercial lease financing	**(8)**	—
Total commercial charge-offs	**(478)**	(719)
Total loans and leases charged off	**(3,439)**	(3,797)
Recoveries of loans and leases previously charged off		
Residential mortgage	**89**	62
Home equity	**135**	163
Credit card	**651**	688
Direct/Indirect consumer	**214**	296
Other consumer	**17**	22
Total consumer recoveries	**1,106**	1,231
U.S. commercial [2]	**129**	298
Non-U.S. commercial	**20**	12
Commercial real estate	**9**	12
Commercial lease financing	**3**	1
Total commercial recoveries	**161**	323
Total recoveries of loans and leases previously charged off	**1,267**	1,554
Net charge-offs	**(2,172)**	(2,243)
Provision for loan and lease losses	**2,460**	(4,173)
Other	**7**	1
Allowance for loan and lease losses, December 31	**12,682**	12,387
Reserve for unfunded lending commitments, January 1	**1,456**	1,878
Provision for unfunded lending commitments	**83**	(421)
Other	**1**	(1)
Reserve for unfunded lending commitments, December 31	**1,540**	1,456
Allowance for credit losses, December 31	**$ 14,222**	$ 13,843
Loan and allowance ratios [3]:		
Loans and leases outstanding at December 31	**$ 1,039,976**	$ 971,305
Allowance for loan and lease losses as a percentage of total loans and leases outstanding at December 31	**1.22 %**	1.28 %
Consumer allowance for loan and lease losses as a percentage of total consumer loans and leases outstanding at December 31	**1.59**	1.62
Commercial allowance for loan and lease losses as a percentage of total commercial loans and leases outstanding at December 31	**0.93**	1.00
Average loans and leases outstanding	**$ 1,010,799**	$ 913,354
Net charge-offs as a percentage of average loans and leases outstanding	**0.21 %**	0.25 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases at December 31	**333**	271
Ratio of the allowance for loan and lease losses at December 31 to net charge-offs	**5.84**	5.52
Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 [4]	**$ 6,998**	$ 7,027
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 [4]	**149 %**	117 %

(1) Includes U.S. small business commercial charge-offs of $203 million in 2022 compared to $425 million in 2021.
(2) Includes U.S. small business commercial recoveries of $49 million in 2022 compared to $74 million in 2021.
(3) Ratios are calculated as allowance for loan and lease losses as a percentage of loans and leases outstanding excluding loans accounted for under the fair value option.
(4) Primarily includes amounts related to credit card and unsecured consumer lending portfolios in *Consumer Banking*.

Market Risk Management

Market risk is the risk that changes in market conditions may adversely impact the value of assets or liabilities, or otherwise negatively impact earnings. This risk is inherent in the financial instruments associated with our operations, primarily within our *Global Markets* segment. We are also exposed to these risks in other areas of the Corporation (e.g., our ALM activities). In the event of market stress, these risks could have a material impact on our results. For more information, see Interest Rate Risk Management for the Banking Book on page 79.

Our traditional banking loan and deposit products are non-trading positions and are generally reported at amortized cost for assets or the amount owed for liabilities (historical cost). However, these positions are still subject to changes in economic value based on varying market conditions, with one of the primary risks being changes in the levels of interest rates. The risk of adverse changes in the economic value of our non-trading positions arising from changes in interest rates is managed through our ALM activities. We have elected to account for certain assets and liabilities under the fair value option.

Our trading positions are reported at fair value with changes reflected in income. Trading positions are subject to various changes in market-based risk factors. The majority of this risk is generated by our activities in the interest rate, foreign exchange, credit, equity and commodities markets. In addition, the values of assets and liabilities could change due to market liquidity, correlations across markets and expectations of market volatility. We seek to manage these risk exposures by using a variety of techniques that encompass a broad range of financial instruments. The key risk management techniques are discussed in more detail in the Trading Risk Management section.

GRM is responsible for providing senior management with a clear and comprehensive understanding of the trading risks to which we are exposed. These responsibilities include ownership of market risk policy, developing and maintaining quantitative risk models, calculating aggregated risk measures, establishing and monitoring position limits consistent with risk appetite, conducting daily reviews and analysis of trading inventory, approving material risk exposures and fulfilling regulatory requirements. Market risks that impact businesses outside of *Global Markets* are monitored and governed by their respective governance functions.

Model risk is the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports. Given that models are used across the Corporation, model risk impacts all risk types including credit, market and operational risks. The Enterprise Model Risk Policy defines model risk standards, consistent with our Risk Framework and risk appetite, prevailing regulatory guidance and industry best practice. All models, including risk management, valuation and regulatory capital models, must meet certain validation criteria, including effective challenge of the conceptual soundness of the model, independent model testing and ongoing monitoring through outcomes analysis and benchmarking. The Enterprise Model Risk Committee, a subcommittee of the MRC, oversees that model standards are consistent with model risk requirements and monitors the effective challenge in the model validation process across the Corporation.

Interest Rate Risk

Interest rate risk represents exposures to instruments whose values vary with the level or volatility of interest rates. These instruments include, but are not limited to, loans, debt securities, certain trading-related assets and liabilities, deposits, borrowings and derivatives. Hedging instruments used to mitigate these risks include derivatives such as options, futures, forwards and swaps.

Foreign Exchange Risk

Foreign exchange risk represents exposures to changes in the values of current holdings and future cash flows denominated in currencies other than the U.S. dollar. The types of instruments exposed to this risk include investments in non-U.S. subsidiaries, foreign currency-denominated loans and securities, future cash flows in foreign currencies arising from foreign exchange transactions, foreign currency-denominated debt and various foreign exchange derivatives whose values fluctuate with changes in the level or volatility of currency exchange rates or non-U.S. interest rates. Hedging instruments used to mitigate this risk include foreign exchange options, currency swaps, futures, forwards, and foreign currency-denominated debt and deposits.

Mortgage Risk

Mortgage risk represents exposures to changes in the values of mortgage-related instruments. The values of these instruments are sensitive to prepayment rates, mortgage rates, agency debt ratings, default, market liquidity, government participation and interest rate volatility. Our exposure to these instruments takes several forms. For example, we trade and engage in market-making activities in a variety of mortgage securities including whole loans, pass-through certificates, commercial mortgages and collateralized mortgage obligations including collateralized debt obligations using mortgages as underlying collateral. In addition, we originate a variety of MBS, which involves the accumulation of mortgage-related loans in anticipation of eventual securitization, and we may hold positions in mortgage securities and residential mortgage loans as part of the ALM portfolio. We also record MSRs as part of our mortgage origination activities. Hedging instruments used to mitigate this risk include derivatives such as options, swaps, futures and forwards as well as securities including MBS and U.S. Treasury securities. For more information, see Mortgage Banking Risk Management on page 80.

Equity Market Risk

Equity market risk represents exposures to securities that represent an ownership interest in a corporation in the form of domestic and foreign common stock or other equity-linked instruments. Instruments that would lead to this exposure include, but are not limited to, the following: common stock, exchange-traded funds, American Depositary Receipts, convertible bonds, listed equity options (puts and calls), OTC equity options, equity total return swaps, equity index futures and other equity derivative products. Hedging instruments used to mitigate this risk include options, futures, swaps, convertible bonds and cash positions.

Commodity Risk

Commodity risk represents exposures to instruments traded in the petroleum, natural gas, power and metals markets. These instruments consist primarily of futures, forwards, swaps and options. Hedging instruments used to mitigate this risk include options, futures and swaps in the same or similar commodity product, as well as cash positions.

Issuer Credit Risk

Issuer credit risk represents exposures to changes in the creditworthiness of individual issuers or groups of issuers. Our portfolio is exposed to issuer credit risk where the value of an asset may be adversely impacted by changes in the levels of credit spreads, by credit migration or by defaults. Hedging instruments used to mitigate this risk include bonds, CDS and other credit fixed-income instruments.

Market Liquidity Risk

Market liquidity risk represents the risk that the level of expected market activity changes dramatically and, in certain cases, may even cease. This exposes us to the risk that we will not be able to transact business and execute trades in an orderly manner which may impact our results. This impact could be further exacerbated if expected hedging or pricing correlations are compromised by disproportionate demand or lack of demand for certain instruments. We utilize various risk mitigating techniques as discussed in more detail in Trading Risk Management.

Trading Risk Management

To evaluate risks in our trading activities, we focus on the actual and potential volatility of revenues generated by individual positions as well as portfolios of positions. Various techniques and procedures are utilized to enable the most complete understanding of these risks. Quantitative measures of market risk are evaluated on a daily basis from a single position to the portfolio of the Corporation. These measures include sensitivities of positions to various market risk factors, such as the potential impact on revenue from a one basis point change in interest rates, and statistical measures utilizing both actual and hypothetical market moves, such as VaR and stress testing. Periods of extreme market stress influence the reliability of these techniques to varying degrees. Qualitative evaluations of market risk utilize the suite of quantitative risk measures while understanding each of their respective limitations. Additionally, risk managers independently evaluate the risk of the portfolios under the current market environment and potential future environments.

VaR is a common statistic used to measure market risk as it allows the aggregation of market risk factors, including the effects of portfolio diversification. A VaR model simulates the value of a portfolio under a range of scenarios in order to generate a distribution of potential gains and losses. VaR represents the loss a portfolio is not expected to exceed more than a certain number of times per period, based on a specified holding period, confidence level and window of historical data. We use one VaR model consistently across the trading portfolios and it uses a historical simulation approach based on a three-year window of historical data. Our primary VaR statistic is equivalent to a 99 percent confidence level, which means that for a VaR with a one-day holding period, there should not be losses in excess of VaR, on average, 99 out of 100 trading days.

Within any VaR model, there are significant and numerous assumptions that will differ from company to company. The accuracy of a VaR model depends on the availability and quality of historical data for each of the risk factors in the portfolio. A VaR model may require additional modeling assumptions for new products that do not have the necessary historical market data or for less liquid positions for which accurate daily prices are not consistently available. For positions with insufficient historical data for the VaR calculation, the process for establishing an appropriate proxy is based on fundamental and statistical analysis of the new product or less liquid position. This analysis identifies reasonable alternatives that replicate both the expected volatility and correlation to other market risk factors that the missing data would be expected to experience.

VaR may not be indicative of realized revenue volatility as changes in market conditions or in the composition of the portfolio can have a material impact on the results. In particular, the historical data used for the VaR calculation might indicate higher or lower levels of portfolio diversification than will be experienced. In order for the VaR model to reflect current market conditions, we update the historical data underlying our VaR model on a weekly basis, or more frequently during periods of market stress, and regularly review the assumptions underlying the model. A minor portion of risks related to our trading positions is not included in VaR. These risks are reviewed as part of our ICAAP. For more information regarding ICAAP, see Capital Management on page 49.

GRM continually reviews, evaluates and enhances our VaR model so that it reflects the material risks in our trading portfolio. Changes to the VaR model are reviewed and approved prior to implementation and any material changes are reported to management through the appropriate management committees.

Trading limits on quantitative risk measures, including VaR, are independently set by *Global Markets* Risk Management and reviewed on a regular basis so that trading limits remain relevant and within our overall risk appetite for market risks. Trading limits are reviewed in the context of market liquidity, volatility and strategic business priorities. Trading limits are set at both a granular level to allow for extensive coverage of risks as well as at aggregated portfolios to account for correlations among risk factors. All trading limits are approved at least annually. Approved trading limits are stored and tracked in a centralized limits management system. Trading limit excesses are communicated to management for review. Certain quantitative market risk measures and corresponding limits have been identified as critical in the Corporation's Risk Appetite Statement. These risk appetite limits are reported on a daily basis and are approved at least annually by the ERC and the Board.

In periods of market stress, *Global Markets* senior leadership communicates daily to discuss losses, key risk positions and any limit excesses. As a result of this process, the businesses may selectively reduce risk.

Table 43 presents the total market-based portfolio VaR, which is the combination of the total covered positions (and less liquid trading positions) portfolio and the fair value option portfolio. Covered positions are defined by regulatory standards as trading assets and liabilities, both on- and off-balance sheet, that meet a defined set of specifications. These specifications identify the most liquid trading positions which are intended to be held for a short-term horizon and where we are able to hedge the material risk elements in a two-way market. Positions in less liquid markets, or where there are restrictions on the ability to trade the positions, typically do not qualify as covered positions. Foreign exchange and commodity positions are always considered covered positions, except for structural foreign currency positions that are excluded with prior regulatory approval.

In addition, Table 43 presents our fair value option portfolio, which includes substantially all of the funded and unfunded exposures for which we elect the fair value option, and their corresponding hedges. Additionally, market risk VaR for trading activities as presented in Table 43 differs from VaR used for regulatory capital calculations due to the holding period being

used. The holding period for VaR used for regulatory capital calculations is 10 days, while for the market risk VaR presented below, it is one day. Both measures utilize the same process and methodology.

The total market-based portfolio VaR results in Table 43 include market risk to which we are exposed from all business segments, excluding credit valuation adjustment (CVA), DVA and related hedges. The majority of this portfolio is within the *Global Markets* segment.

Table 43 presents year-end, average, high and low daily trading VaR for 2022 and 2021 using a 99 percent confidence level. The amounts disclosed in Table 43 and Table 44 align to the view of covered positions used in the Basel 3 capital calculations. Foreign exchange and commodity positions are always considered covered positions, regardless of trading or banking treatment for the trade, except for structural foreign currency positions that are excluded with prior regulatory approval.

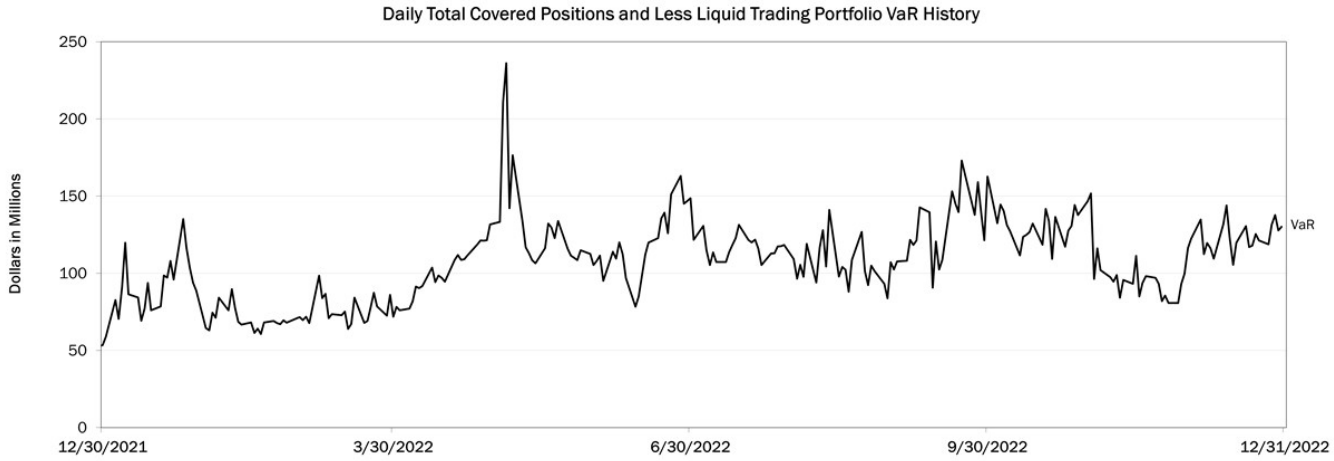
The annual average of total covered positions and less liquid trading positions portfolio VaR increased for 2022 compared to 2021 driven by heightened market volatility and reduced diversification across asset classes.

Table 43 Market Risk VaR for Trading Activities

	2022				2021			
(Dollars in millions)	Year End	Average	High [1]	Low [1]	Year End	Average	High [1]	Low [1]
Foreign exchange	$ 38	$ 21	$ 39	$ 12	$ 11	$ 12	$ 21	$ 5
Interest rate	36	36	56	24	54	40	80	16
Credit	76	71	106	52	73	69	84	53
Equity	18	20	33	12	21	24	35	19
Commodities	8	13	27	7	6	8	28	4
Portfolio diversification	(81)	(91)	n/a	n/a	(114)	(100)	n/a	n/a
Total covered positions portfolio	95	70	140	42	51	53	85	34
Impact from less liquid exposures [2]	35	38	n/a	n/a	8	20	n/a	n/a
Total covered positions and less liquid trading positions portfolio	130	108	236	61	59	73	125	46
Fair value option loans	48	51	65	37	51	50	65	31
Fair value option hedges	16	17	24	13	15	16	20	11
Fair value option portfolio diversification	(38)	(36)	n/a	n/a	(27)	(32)	n/a	n/a
Total fair value option portfolio	26	32	44	23	39	34	53	23
Portfolio diversification	9	(11)	n/a	n/a	(24)	(10)	n/a	n/a
Total market-based portfolio	$ 165	$ 129	287	70	$ 74	$ 97	169	54

[1] The high and low for each portfolio may have occurred on different trading days than the high and low for the components. Therefore the impact from less liquid exposures and the amount of portfolio diversification, which is the difference between the total portfolio and the sum of the individual components, is not relevant.
[2] Impact is net of diversification effects between the covered positions and less liquid trading positions portfolios.
n/a = not applicable

The following graph presents the daily covered positions and less liquid trading positions portfolio VaR for 2022, corresponding to the data in Table 43.



Additional VaR statistics produced within our single VaR model are provided in Table 44 at the same level of detail as in Table 43. Evaluating VaR with additional statistics allows for an increased understanding of the risks in the portfolio, as the historical market data used in the VaR calculation does not necessarily follow a predefined statistical distribution. Table 44 presents average trading VaR statistics at 99 percent and 95 percent confidence levels for 2022 and 2021.

Table 44 Average Market Risk VaR for Trading Activities – 99 percent and 95 percent VaR Statistics

(Dollars in millions)	2022		2021	
	99 percent	95 percent	99 percent	95 percent
Foreign exchange	$ 21	$ 12	$ 12	$ 8
Interest rate	36	17	40	20
Credit	71	28	69	21
Equity	20	11	24	12
Commodities	13	7	8	4
Portfolio diversification	(91)	(46)	(100)	(39)
Total covered positions portfolio	70	29	53	26
Impact from less liquid exposures	38	7	20	2
Total covered positions and less liquid trading positions portfolio	108	36	73	28
Fair value option loans	51	14	50	12
Fair value option hedges	17	10	16	9
Fair value option portfolio diversification	(36)	(13)	(32)	(9)
Total fair value option portfolio	32	11	34	12
Portfolio diversification	(11)	(7)	(10)	(7)
Total market-based portfolio	$ 129	$ 40	$ 97	$ 33

Backtesting

The accuracy of the VaR methodology is evaluated by backtesting, which compares the daily VaR results, utilizing a one-day holding period, against a comparable subset of trading revenue. A backtesting excess occurs when a trading loss exceeds the VaR for the corresponding day. These excesses are evaluated to understand the positions and market moves that produced the trading loss with a goal to help confirm that the VaR methodology accurately represents those losses. We expect the frequency of trading losses in excess of VaR to be in line with the confidence level of the VaR statistic being tested. For example, with a 99 percent confidence level, we expect one trading loss in excess of VaR every 100 days or between two to three trading losses in excess of VaR over the course of a year. The number of backtesting excesses observed can differ from the statistically expected number of excesses if the current level of market volatility is materially different than the level of market volatility that existed during the three years of historical data used in the VaR calculation.

The trading revenue used for backtesting is defined by regulatory agencies in order to most closely align with the VaR component of the regulatory capital calculation. This revenue differs from total trading-related revenue in that it excludes revenue from trading activities that either do not generate market risk or the market risk cannot be included in VaR. Some examples of the types of revenue excluded for backtesting are fees, commissions, reserves, net interest income and intra-day trading revenues.

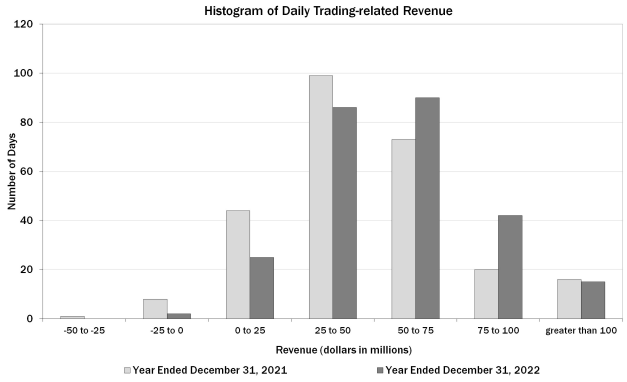
We conduct daily backtesting on the VaR results used for regulatory capital calculations as well as the VaR results for key legal entities, regions and risk factors. These results are reported to senior market risk management. Senior management regularly reviews and evaluates the results of these tests.

During 2022, there was one day where this subset of trading revenue had losses that exceeded our total covered portfolio VaR, utilizing a one-day holding period.

Total Trading-related Revenue

Total trading-related revenue, excluding brokerage fees, and CVA, DVA and funding valuation adjustment gains (losses), represents the total amount earned from trading positions, including market-based net interest income, which are taken in a diverse range of financial instruments and markets. For more information on fair value, see *Note 20 – Fair Value Measurements* to the Consolidated Financial Statements. Trading-related revenue can be volatile and is largely driven by general market conditions and customer demand. Also, trading-related revenue is dependent on the volume and type of transactions, the level of risk assumed, and the volatility of price and rate movements at any given time within the ever-changing market environment. Significant daily revenue by business is monitored and the primary drivers of these are reviewed.

The following histogram is a graphic depiction of trading volatility and illustrates the daily level of trading-related revenue for 2022 and 2021. During 2022, positive trading-related revenue was recorded for 99 percent of the trading days, of which 90 percent were daily trading gains of over $25 million, and the largest loss was $9 million. This compares to 2021 where positive trading-related revenue was recorded for 97 percent of the trading days, of which 80 percent were daily trading gains of over $25 million, and the largest loss was $45 million.



Trading Portfolio Stress Testing

Because the very nature of a VaR model suggests results can exceed our estimates and it is dependent on a limited historical window, we also stress test our portfolio using scenario analysis. This analysis estimates the change in the value of our trading portfolio that may result from abnormal market movements.

A set of scenarios, categorized as either historical or hypothetical, are computed daily for the overall trading portfolio and individual businesses. These scenarios include shocks to underlying market risk factors that may be well beyond the shocks found in the historical data used to calculate VaR.

Historical scenarios simulate the impact of the market moves that occurred during a period of extended historical market stress. Generally, a multi-week period representing the most severe point during a crisis is selected for each historical scenario. Hypothetical scenarios provide estimated portfolio impacts from potential future market stress events. Scenarios are reviewed and updated in response to changing positions and new economic or political information. In addition, new or ad hoc scenarios are developed to address specific potential market events or particular vulnerabilities in the portfolio. The stress tests are reviewed on a regular basis and the results are presented to senior management.

Stress testing for the trading portfolio is integrated with enterprise-wide stress testing and incorporated into the limits framework. The macroeconomic scenarios used for enterprise-wide stress testing purposes differ from the typical trading portfolio scenarios in that they have a longer time horizon and the results are forecasted over multiple periods for use in consolidated capital and liquidity planning. For more information, see Managing Risk on page 46.

Interest Rate Risk Management for the Banking Book

The following discussion presents net interest income for banking book activities.

Interest rate risk represents the most significant market risk exposure to our banking book balance sheet. Interest rate risk is measured as the potential change in net interest income caused by movements in market interest rates. Client-facing activities, primarily lending and deposit-taking, create interest rate sensitive positions on our balance sheet.

We prepare forward-looking forecasts of net interest income. The baseline forecast takes into consideration expected future business growth, ALM positioning and the future direction of interest rate movements as implied by market-based forward curves.

We then measure and evaluate the impact that alternative interest rate scenarios have on the baseline forecast in order to assess interest rate sensitivity under varied conditions. The net interest income forecast is frequently updated for changing assumptions and differing outlooks based on economic trends, market conditions and business strategies. Thus, we continually monitor our banking book balance sheet position in order to maintain an acceptable level of exposure to interest rate changes.

The interest rate scenarios that we analyze incorporate balance sheet assumptions such as loan and deposit growth and pricing, changes in funding mix, product repricing, maturity characteristics and investment securities premium amortization. Our overall goal is to manage interest rate risk so that movements in interest rates do not significantly adversely affect earnings and capital.

Table 45 presents the spot and 12-month forward rates used in developing the forward curve used in our baseline forecasts at December 31, 2022 and 2021.

Table 45 Forward Rates

	December 31, 2022		
	Federal Funds	**Three-month LIBOR**	**10-Year Swap**
Spot rates	**4.50 %**	**4.77 %**	**3.84 %**
12-month forward rates	**4.75**	**4.78**	**3.62**
	December 31, 2021		
Spot rates	0.25 %	0.21 %	1.58 %
12-month forward rates	1.00	1.07	1.84

Table 46 shows the pretax impact to forecasted net interest income over the next 12 months from December 31, 2022 and 2021 resulting from instantaneous parallel and non-parallel shocks to the market-based forward curve. Periodically, we evaluate the scenarios presented so that they are meaningful in the context of the current rate environment. The interest rate scenarios also assume U.S. dollar interest rates are floored at zero. Depending on the level of interest rates, Down-rate scenarios may not receive the full impact of the rate shock, particularly in low rate environments.

The overall decrease in asset sensitivity, as shown in the following table, to Up-rate scenarios was primarily due to an increase in long-end and short-end rates. We continue to be asset sensitive to a parallel upward move in interest rates with the majority of that impact coming from the short end of the yield curve. Additionally, higher interest rates negatively impact the fair value of our debt securities classified as available for sale and adversely affect accumulated OCI and thus capital levels under the Basel 3 capital rules. Under instantaneous upward parallel shifts, the near-term adverse impact to Basel 3 capital would be reduced over time by offsetting positive impacts to net interest income generated from the banking book activities. For more information on Basel 3, see Capital Management – Regulatory Capital on page 50.

Table 46 Estimated Banking Book Net Interest Income Sensitivity to Curve Changes

(Dollars in millions)	Short Rate (bps)	Long Rate (bps)	December 31 **2022**	2021
Parallel Shifts				
+100 bps instantaneous shift	+100	+100	**$ 3,829**	$ 6,542
-100 bps instantaneous shift	-100	-100	**(4,591)**	n/m
Flatteners				
Short-end instantaneous change	+100	—	**3,698**	4,982
Long-end instantaneous change	—	-100	**(157)**	n/m
Steepeners				
Short-end instantaneous change	-100	—	**(4,420)**	n/m
Long-end instantaneous change	—	+100	**131**	1,646

n/m = not meaningful

The sensitivity analysis in Table 46 assumes that we take no action in response to these rate shocks and does not assume any change in other macroeconomic variables normally correlated with changes in interest rates. As part of our ALM activities, we use securities, certain residential mortgages, and interest rate and foreign exchange derivatives in managing interest rate sensitivity.

The behavior of our deposit portfolio in the baseline forecast and in alternate interest rate scenarios is a key assumption in our projected estimates of net interest income. The sensitivity analysis in Table 46 assumes no change in deposit portfolio size or mix from the baseline forecast in alternate rate environments. In higher rate scenarios, any customer activity resulting in the replacement of low-cost or noninterest-bearing deposits with higher yielding deposits or market-based funding would reduce our benefit in those scenarios.

Interest Rate and Foreign Exchange Derivative Contracts

We use interest rate and foreign exchange derivative contracts in our ALM activities to manage our interest rate and foreign exchange risks. Specifically, we use those derivatives to manage both the variability in cash flows and changes in fair value of various assets and liabilities arising from those risks. Our interest rate derivative contracts are generally non-leveraged swaps tied to various benchmark interest rates and foreign exchange basis swaps, options, futures and forwards, and our foreign exchange contracts include cross-currency interest rate swaps, foreign currency futures contracts, foreign currency forward contracts and options.

The derivatives used in our ALM activities can be split into two broad categories: designated accounting hedges and other risk management derivatives. Designated accounting hedges are primarily used to manage our exposure to interest rates as described in the Interest Rate Risk Management for the Banking Book section and are included in the sensitivities presented in Table 46. The Corporation also uses foreign currency derivatives in accounting hedges to manage substantially all of the foreign exchange risk of our foreign operations. By hedging the foreign exchange risk of our foreign operations, the Corporation's market risk exposure in this area is not significant.

Risk management derivatives are predominantly used to hedge foreign exchange risks related to various foreign currency-denominated assets and liabilities and eliminate substantially all foreign currency exposures in the cash flows of the Corporation's non-trading foreign currency-denominated financial instruments. These foreign exchange derivatives are sensitive to other market risk exposures such as cross-currency basis spreads and interest rate risk. However, as these features are not a significant component of these foreign exchange derivatives, the market risk related to this exposure is not significant. For more information on the accounting for derivatives, see *Note 3 – Derivatives* to the Consolidated Financial Statements.

Mortgage Banking Risk Management

We originate, fund and service mortgage loans, which subject us to credit, liquidity and interest rate risks, among others. We determine whether loans will be held for investment or held for sale at the time of commitment and manage credit and liquidity risks by selling or securitizing a portion of the loans we originate.

Interest rate risk and market risk can be substantial in the mortgage business. Changes in interest rates and other market factors impact the volume of mortgage originations. Changes in interest rates also impact the value of interest rate lock commitments (IRLCs) and the related residential first mortgage LHFS between the date of the IRLC and the date the loans are sold to the secondary market. An increase in mortgage interest rates typically leads to a decrease in the value of these instruments. Conversely, when there is an increase in interest rates, the value of the MSRs will increase driven by lower prepayment expectations. Because the interest rate risks of these hedged items offset, we combine them into one overall hedged item with one combined economic hedge portfolio consisting of derivative contracts and securities.

During 2022, 2021 and 2020, we recorded gains of $78 million, $39 million and $321 million. For more information on MSRs, see *Note 20 – Fair Value Measurements* to the Consolidated Financial Statements.

Compliance and Operational Risk Management

Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the reputation of the Corporation arising from the failure of the Corporation to comply with the requirements of applicable laws, rules, regulations and our internal policies and procedures (collectively, applicable laws, rules and regulations). We are subject to comprehensive regulation under federal and state laws, rules and regulations in the U.S. and the laws of the various jurisdictions in which we operate, including those related to financial crimes and anti-money laundering, market conduct, trading activities, fair lending, privacy, data protection and unfair, deceptive or abusive acts or practices.

Operational risk is the risk of loss resulting from inadequate or failed processes or systems, people or external events, and includes legal risk. Operational risk may occur anywhere in the Corporation, including third-party business processes, and is not limited to operations functions. The Corporation faces a number of key operational risks including third-party risk, model risk, conduct risk, technology risk, information security risk and data risk. Operational risk can result in financial losses and reputational impacts and is a component in the calculation of total RWA used in the Basel 3 capital calculation. For more information on Basel 3 calculations, see Capital Management on page 49.

FLUs and control functions are first and foremost responsible for managing all aspects of their businesses, including their compliance and operational risk. FLUs and control functions are required to understand their business processes and related risks and controls, including third-party dependencies and the related regulatory requirements, and monitor and report on the effectiveness of the control environment. In order to actively monitor and assess the performance of their processes and controls, they must conduct comprehensive quality assurance activities and identify issues and risks to remediate control gaps and weaknesses. FLUs and control functions must also adhere to compliance and operational risk appetite limits to meet strategic, capital and financial planning objectives. Finally, FLUs and control functions are responsible for the proactive identification, management and escalation of compliance and operational risks across the Corporation. Collectively, these efforts are important to strengthen their compliance and operational resiliency, which is the ability to deliver critical operations through disruption.

Global Compliance and Operational Risk teams independently assess compliance and operational risk, monitor business activities and processes and evaluate FLUs and control functions for adherence to applicable laws, rules and regulations, including identifying issues and risks, and reporting

on the state of the control environment. Corporate Audit provides an independent assessment and validation through testing of key compliance and operational risk processes and controls across the Corporation.

The Corporation's Global Compliance – Enterprise Policy and Operational Risk Management – Enterprise Policy set the requirements for reporting compliance and operational risk information to executive management as well as the Board or appropriate Board-level committees and reflect Global Compliance and Operational Risk's responsibilities for conducting independent oversight of the Corporation's compliance and operational risk management activities. The Board provides oversight of compliance risk through its Audit Committee and the ERC, and operational risk through its ERC.

A key operational risk facing the Corporation is information security, which includes cybersecurity. Cybersecurity risk includes exposure to failures or interruptions of service or security breaches resulting from malicious technological attacks that impact the confidentiality, integrity or availability of our or third parties' operations, systems or data. The Corporation seeks to mitigate information security risk and associated reputational and compliance risk by employing a multi-layered and intelligence-led Global Information Security Program focused on preparing for, preventing, detecting, mitigating, responding to and recovering from cyber threats and incidents and effectively operating the Corporation's processes. Additionally, our business continuity policy, standards and procedures are designed to maintain the availability of business functions and enable impacted units within the Corporation and third parties to achieve strategic objectives in the event of a cybersecurity incident.

The Global Information Security Program is supported by three lines of defense. The Global Information Security Team within the first line of defense is responsible for the day-to-day management of the Global Information Security Program, which includes defining policies and procedures to safeguard the Corporation's information systems and data, conducting vulnerability and third-party information security assessments, information security event management (e.g., responding to ransomware and distributed denial of service attacks), evaluation of external cyber intelligence, supporting industry cybersecurity efforts and working with governmental agencies, and developing employee training to support adherence to the Corporation's policies and procedures. As the second line of defense, Global Compliance and Operational Risk independently assesses, monitors and tests information security risk across the Corporation, as well as the effectiveness of the Global Information Security Program. Corporate Audit serves as the third line of defense, conducting additional independent review and validation of the first-line processes and functions. As part of our Global Information Security Program, we leverage both internal and external assessments and partnerships with industry leaders to help approach information security holistically. Additionally the Corporation maintains a comprehensive enterprise-wide program that defines standards for the planning, sourcing, management, and oversight of third-party relationships and third-party access to its system, facilities, and/or confidential or proprietary data for a business purpose or supervisory function.

Through established governance structures, we have processes to help facilitate appropriate and effective oversight of information security risk. These routines enable our three lines of defense and management to debate information security risks and monitor control performance to allow for further escalation to executive management, management and Board-level committees or to the Board, as appropriate. The Board is actively engaged in the oversight of Bank of America's Global Information Security Program and devotes significant time and attention to the oversight of cybersecurity and information security risk. The Board regularly discusses cybersecurity and information security risks with the Chief Technology and Information Officer and the Chief Information Security Officer. Additionally, the ERC receives regular reporting, and reviews and approves the Information Security Program and Policy on an annual basis.

Reputational Risk Management

Reputational risk is the risk that negative perception of the Corporation may adversely impact profitability or operations. Reputational risk may result from many of the Corporation's activities, including those related to the management of our strategic, operational, compliance and credit risks.

The Corporation manages reputational risk through established policies and controls embedded throughout its business and risk management processes. We proactively monitor and identify potential reputational risk events and have processes established to mitigate reputational risks in a timely manner. If reputational risk events occur, we focus on remediating the underlying issue and taking action to minimize damage to the Corporation's reputation. The Corporation has processes and procedures in place to respond to events that give rise to reputational risk, including educating individuals and organizations that influence public opinion, implementing external communication strategies to mitigate the risk, and informing key stakeholders of potential reputational risks. The Corporation's organization and governance structure provides oversight of reputational risks. Reputational risk reporting is provided regularly and directly to senior management and the ERC, which provides primary oversight of reputational risk. In addition, each FLU has a committee, which includes representatives from Legal and Risk, that is responsible for the oversight of reputational risk, including approval for business activities that present elevated levels of reputational risks.

Climate Risk Management

Climate-related risks are divided into two major categories: (1) risks related to the physical impacts of climate change, driven by extreme weather events such as hurricanes and floods, as well as chronic longer-term shifts such as rising average global temperatures and sea levels, and (2) risks related to the transition to a low-carbon economy, which may entail extensive policy, legal, technology and market changes. These changes and events may have broad impacts on operations, supply chains, distribution networks, customers and markets and are otherwise referred to, respectively, as physical risk and transition risk. These risks may impact both financial and nonfinancial risk types. Physical risk may lead to increased credit risk by diminishing borrowers' repayment capacity or impacting the value of collateral. Physical risk may also increase operational risk by impacting the Corporation's facilities, employees, customers or vendors. Transition risks may amplify credit risk through the financial impacts of changes in policy, technology or the market on the Corporation or its counterparties. Unanticipated market changes can lead to sudden price adjustments and give rise to heightened market risk. In addition, reputational risk may arise, including from our climate-related practices and disclosures and if we do not meet our climate-related commitments.

Effective management of climate risk requires coordinated governance, clearly defined roles and responsibilities and well-

developed processes to identify, measure, monitor and control risks. As climate risk spans all key risk types, we have developed and continue to enhance processes to embed climate risk considerations into our Risk Framework and risk management programs established for strategic, credit, market, liquidity, compliance, operational and reputational risks. Our Environmental and Social Risk Policy Framework aligns with our Risk Framework and provides additional clarity and transparency regarding our approach to environmental and social risks, inclusive of climate risk.

Our governance framework establishes oversight of climate risk practices and strategies by the Board, supported by its ERC, as well as the MRC and the Responsible Growth Committee, both of which are management-level committees comprised of senior leaders across every major FLU and control function. The Responsible Growth Committee is supported by the ESG Disclosure sub-committee, which is responsible for reviewing and providing oversight of the Corporation's climate and ESG-related public disclosures.

Our climate risk management efforts are overseen by an executive officer who reports to the CRO. The Climate Risk Council, which consists of leaders across risk, FLU and control functions, meets routinely to discuss our approach to managing climate-related risks in line with our Risk Framework.

In 2021, we publicly announced our commitment to achieve net zero emissions in our financing activities, operations, and supply chain before 2050 (Net Zero Goal) and set 2030 emissions targets for our operations and supply chain. In connection with our Net Zero Goal, in 2022, we announced a target to reduce emissions by 2030 associated with our financing activities related to auto manufacturing, energy and power generation (2030 Targets). In our September 2022 Task Force on Climate-related Financial Disclosures Report, we disclosed our 2019 and 2020 financed emissions and emissions intensity metrics for these sectors, with 2019 serving as the baseline for our 2030 Targets.

We plan to disclose the financed emissions for additional portions of our business loan portfolio in 2023, and we plan to set financing activity emission reduction targets for other key sectors by April 2024.

Achieving our climate–related goals and targets, including our Net Zero Goal and 2030 Targets, may require technological advances, clearly defined roadmaps for industry sectors, new standards and public policies, including those that improve the cost of capital for the transition to a low-carbon economy and better emissions data reporting, as well as ongoing, strong and active engagement with customers, suppliers, investors, government officials and other stakeholders.

Given the extended period of these and other climate-related goals we have established, our initiatives have not resulted in a significant effect on our results of operations or financial position in the relevant periods presented herein.

For more information about climate-related matters, including how the Corporation manages climate risk, and the Corporation's climate-related goals and commitments, including our plans to achieve our Net Zero Goal and 2030 Targets and progress on our sustainable finance goals, see the Corporation's website, including our 2022 Task Force on Climate-related Financial Disclosures Report and the 2022 Annual Report to shareholders available on the Investor Relations portion of our website in March 2023. The contents of the Corporation's website and 2022 Annual Report to shareholders are not incorporated by reference into this Annual Report on Form 10-K. For more information on climate-related risks, see Item 1A. Risk Factors on page 8.

The foregoing discussion and our discussion in the 2022 Annual Report to shareholders regarding our goals and commitments with respect to climate risk management, including environmental transition considerations, include "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are not guarantees of future results or performance and involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and are often beyond the Corporation's control. Actual outcomes and results may differ materially from those expressed in, or implied by, any of these forward-looking statements.

Complex Accounting Estimates

Our significant accounting principles, as described in *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements, are essential in understanding the MD&A. Many of our significant accounting principles require complex judgments to estimate the values of assets and liabilities. We have procedures and processes in place to facilitate making these judgments.

The more judgmental estimates are summarized in the following discussion. We have identified and described the development of the variables most important in the estimation processes that involve mathematical models to derive the estimates. In many cases, there are numerous alternative judgments that could be used in the process of determining the inputs to the models. Where alternatives exist, we have used the factors that we believe represent the most reasonable value in developing the inputs. Actual performance that differs from our estimates of the key variables could materially impact our results of operations. Separate from the possible future impact to our results of operations from input and model variables, the value of our lending portfolio and market-sensitive assets and liabilities may change subsequent to the balance sheet date, often significantly, due to the nature and magnitude of future credit and market conditions. Such credit and market conditions may change quickly and in unforeseen ways and the resulting volatility could have a significant, negative effect on future operating results. These fluctuations would not be indicative of deficiencies in our models or inputs.

Allowance for Credit Losses

The allowance for credit losses includes the allowance for loan and lease losses and the reserve for unfunded lending commitments. Our process for determining the allowance for credit losses is discussed in *Note 1 – Summary of Significant Accounting Principles* and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

The determination of the allowance for credit losses is based on numerous estimates and assumptions, which require

a high degree of judgment and are often interrelated. A critical judgment in the process is the weighting of our forward-looking macroeconomic scenarios that are incorporated into our quantitative models. As any one economic outlook is inherently uncertain, the Corporation uses multiple macroeconomic scenarios in its ECL calculation, which have included a baseline scenario derived from consensus estimates, an adverse scenario reflecting an extended moderate recession, a downside scenario reflecting persistent inflation and interest rates above the baseline scenario, a tail risk scenario similar to the severely adverse scenario used in stress testing and an upside scenario that considers the potential for improvement above the baseline scenario. The overall economic outlook is weighted 95 percent towards a recessionary environment in 2023, with continued inflationary pressures leading to lower gross domestic product (GDP) and higher unemployment rate expectations as compared to the prior year. Generally, as the consensus estimates improve or deteriorate, the allowance for credit losses will change in a similar direction. There are multiple variables that drive the macroeconomic scenarios with the key variables including, but not limited to, U.S. GDP and unemployment rates. As of December 31, 2021, the weighted macroeconomic outlook for the U.S. average unemployment rate was forecasted at 5.2 percent, 4.7 percent and 4.3 percent in the fourth quarters of 2022, 2023 and 2024, respectively, and the weighted macroeconomic outlook for U.S. GDP was forecasted to grow at 2.1 percent, 1.9 percent and 1.9 percent year-over-year in the fourth quarters of 2022, 2023 and 2024, respectively. As of December 31, 2022, the latest consensus estimates for the U.S. average unemployment rate for the fourth quarter of 2022 was 3.7 percent and U.S. GDP was forecasted to grow 0.4 percent year-over-year in the fourth quarter of 2022, reflecting a tighter labor market and depressed growth expectations compared to our macroeconomic outlook as of December 31, 2021, and were factored into our allowance for credit losses estimate as of December 31, 2022. In addition, as of December 31, 2022, the weighted macroeconomic outlook for the U.S. average unemployment rate was forecasted at 5.6 percent and 5.0 percent in the fourth quarters of 2023 and 2024, and the weighted macroeconomic outlook for U.S. GDP was forecasted to contract 0.4 percent and grow 1.2 percent year-over-year in the fourth quarters of 2023 and 2024.

In addition to the above judgments and estimates, the allowance for credit losses can also be impacted by unanticipated changes in asset quality of the portfolio, such as increases or decreases in credit and/or internal risk ratings in our commercial portfolio, improvement or deterioration in borrower delinquencies or credit scores in our credit card portfolio and increases or decreases in home prices, which is a primary driver of LTVs, in our consumer real estate portfolio, all of which have some degree of uncertainty. The allowance for credit losses increased to $14.2 billion from $13.8 billion at December 31, 2021, primarily due to loan growth and a dampened macroeconomic outlook in 2022.

To provide an illustration of the sensitivity of the macroeconomic scenarios and other assumptions on the estimate of our allowance for credit losses, the Corporation compared the December 31, 2022 modeled ECL from the baseline scenario and our adverse scenario. Relative to the baseline scenario, the adverse scenario assumed a peak U.S. unemployment rate of nearly three percentage points higher than the baseline scenario, a decline in U.S. GDP followed by a prolonged recovery and a lower home price outlook with a difference of approximately eight percent at the trough. This sensitivity analysis resulted in a hypothetical increase in the allowance for credit losses of approximately $4 billion.

While the sensitivity analysis may be useful to understand how changes in macroeconomic assumptions could impact our modeled ECLs, it is not meant to forecast how our allowance for credit losses is expected to change in a different macroeconomic outlook. Importantly, the analysis does not incorporate a variety of factors, including qualitative reserves and the weighting of alternate scenarios, which could have offsetting effects on the estimate. Considering the variety of factors contemplated when developing and weighting macroeconomic outlooks such as recent economic events, leading economic indicators, views of internal and third-party economists and industry trends, in addition to other qualitative factors, the Corporation believes the allowance for credit losses at December 31, 2022 is appropriate.

Fair Value of Financial Instruments

Under applicable accounting standards, we are required to maximize the use of observable inputs and minimize the use of unobservable inputs in measuring fair value. We classify fair value measurements of financial instruments and MSRs based on the three-level fair value hierarchy in the accounting standards.

The fair values of assets and liabilities may include adjustments, such as market liquidity and credit quality, where appropriate. Valuations of products using models or other techniques are sensitive to assumptions used for the significant inputs. Where market data is available, the inputs used for valuation reflect that information as of our valuation date. Inputs to valuation models are considered unobservable if they are supported by little or no market activity. In periods of extreme volatility, lessened liquidity or in illiquid markets, there may be more variability in market pricing or a lack of market data to use in the valuation process. In keeping with the prudent application of estimates and management judgment in determining the fair value of assets and liabilities, we have in place various processes and controls that include: a model validation policy that requires review and approval of quantitative models used for deal pricing, financial statement fair value determination and risk quantification; a trading product valuation policy that requires verification of all traded product valuations; and a periodic review and substantiation of daily profit and loss reporting for all traded products. Primarily through validation controls, we utilize both broker and pricing service inputs which can and do include both market-observable and internally-modeled values and/or valuation inputs. Our reliance on this information is affected by our understanding of how the broker and/or pricing service develops its data with a higher degree of reliance applied to those that are more directly observable and lesser reliance applied to those developed through their own internal modeling. For example, broker quotes in less active markets may only be indicative and therefore less reliable. These processes and controls are performed independently of the business. For more information, see *Note 20 – Fair Value Measurements* and *Note 21 – Fair Value Option* to the Consolidated Financial Statements.

Level 3 Assets and Liabilities

Financial assets and liabilities, and MSRs, where values are based on valuation techniques that require inputs that are both unobservable and are significant to the overall fair value measurement are classified as Level 3 under the fair value hierarchy established in applicable accounting standards. The fair value of these Level 3 financial assets and liabilities and

MSRs is determined using pricing models, discounted cash flow methodologies or similar techniques for which the determination of fair value requires significant management judgment or estimation.

Level 3 financial instruments may be hedged with derivatives classified as Level 1 or 2; therefore, gains or losses associated with Level 3 financial instruments may be offset by gains or losses associated with financial instruments classified in other levels of the fair value hierarchy. The Level 3 gains and losses recorded in earnings did not have a significant impact on our liquidity or capital. We conduct a review of our fair value hierarchy classifications on a quarterly basis. Transfers into or out of Level 3 are made if the significant inputs used in the financial models measuring the fair values of the assets and liabilities became unobservable or observable, respectively, in the current marketplace. For more information on transfers into and out of Level 3 during 2022, 2021 and 2020, see *Note 20 – Fair Value Measurements* to the Consolidated Financial Statements.

Accrued Income Taxes and Deferred Tax Assets

Accrued income taxes, reported as a component of either other assets or accrued expenses and other liabilities on the Consolidated Balance Sheet, represent the net amount of current income taxes we expect to pay to or receive from various taxing jurisdictions attributable to our operations to date. We currently file income tax returns in more than 100 jurisdictions and consider many factors, including statutory, judicial and regulatory guidance, in estimating the appropriate accrued income taxes for each jurisdiction.

Net deferred tax assets, reported as a component of other assets on the Consolidated Balance Sheet, represent the net decrease in taxes expected to be paid in the future because of net operating loss (NOL) and tax credit carryforwards and because of future reversals of temporary differences in the bases of assets and liabilities as measured by tax laws and their bases as reported in the financial statements. NOL and tax credit carryforwards result in reductions to future tax liabilities, and many of these attributes can expire if not utilized within certain periods. We consider the need for valuation allowances to reduce net deferred tax assets to the amounts that we estimate are more likely than not to be realized.

Consistent with the applicable accounting guidance, we monitor relevant tax authorities and change our estimates of accrued income taxes and/or net deferred tax assets due to changes in income tax laws and their interpretation by the courts and regulatory authorities. These revisions of our estimates, which also may result from our income tax planning and from the resolution of income tax audit matters, may be material to our operating results for any given period.

See *Note 19 – Income Taxes* to the Consolidated Financial Statements for a table of significant tax attributes and additional information. For more information, see page 17 under Item 1A. Risk Factors – Regulatory, Compliance and Legal.

Goodwill and Intangible Assets

The nature of and accounting for goodwill and intangible assets are discussed in *Note 1 – Summary of Significant Accounting Principles*, and *Note 7 – Goodwill and Intangible Assets* to the Consolidated Financial Statements.

We completed our annual goodwill impairment test as of June 30, 2022. Based on our assessment, we have concluded that goodwill was not impaired.

Certain Contingent Liabilities

For more information on the complex judgments associated with certain contingent liabilities, see *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Non-GAAP Reconciliations

Tables 47 and 48 provide reconciliations of certain non-GAAP financial measures to GAAP financial measures.

Table 47 Annual Reconciliations to GAAP Financial Measures [1]

(Dollars in millions, shares in thousands)	2022	2021	2020
Reconciliation of average shareholders' equity to average tangible shareholders' equity and average tangible common shareholders' equity			
Shareholders' equity	**$ 270,299**	$ 273,757	$ 267,309
Goodwill	**(69,022)**	(69,005)	(68,951)
Intangible assets (excluding MSRs)	**(2,117)**	(2,177)	(1,862)
Related deferred tax liabilities	**922**	916	821
Tangible shareholders' equity	**$ 200,082**	$ 203,491	$ 197,317
Preferred stock	**(28,318)**	(23,970)	(23,624)
Tangible common shareholders' equity	**$ 171,764**	$ 179,521	$ 173,693
Reconciliation of year-end shareholders' equity to year-end tangible shareholders' equity and year-end tangible common shareholders' equity			
Shareholders' equity	**$ 273,197**	$ 270,066	$ 272,924
Goodwill	**(69,022)**	(69,022)	(68,951)
Intangible assets (excluding MSRs)	**(2,075)**	(2,153)	(2,151)
Related deferred tax liabilities	**899**	929	920
Tangible shareholders' equity	**$ 202,999**	$ 199,820	$ 202,742
Preferred stock	**(28,397)**	(24,708)	(24,510)
Tangible common shareholders' equity	**$ 174,602**	$ 175,112	$ 178,232
Reconciliation of year-end assets to year-end tangible assets			
Assets	**$ 3,051,375**	$3,169,495	$2,819,627
Goodwill	**(69,022)**	(69,022)	(68,951)
Intangible assets (excluding MSRs)	**(2,075)**	(2,153)	(2,151)
Related deferred tax liabilities	**899**	929	920
Tangible assets	**$ 2,981,177**	$3,099,249	$2,749,445

[1] Presents reconciliations of non-GAAP financial measures to GAAP financial measures. For more information on non-GAAP financial measures and ratios we use in assessing the results of the Corporation, see Supplemental Financial Data on page 32.

Table 48 Quarterly Reconciliations to GAAP Financial Measures [1]

	2022 Quarters				2021 Quarters			
(Dollars in millions)	**Fourth**	Third	Second	First	Fourth	Third	Second	First
Reconciliation of average shareholders' equity to average tangible shareholders' equity and average tangible common shareholders' equity								
Shareholders' equity	**$ 272,629**	$ 271,017	$ 268,197	$ 269,309	$ 270,883	$ 275,484	$ 274,632	$ 274,047
Goodwill	**(69,022)**	(69,022)	(69,022)	(69,022)	(69,022)	(69,023)	(69,023)	(68,951)
Intangible assets (excluding MSRs)	**(2,088)**	(2,107)	(2,127)	(2,146)	(2,166)	(2,185)	(2,212)	(2,146)
Related deferred tax liabilities	**914**	920	926	929	913	915	915	920
Tangible shareholders' equity	**$ 202,433**	$ 200,808	$ 197,974	$ 199,070	$ 200,608	$ 205,191	$ 204,312	$ 203,870
Preferred stock	**(28,982)**	(29,134)	(28,674)	(26,444)	(24,364)	(23,441)	(23,684)	(24,399)
Tangible common shareholders' equity	**$ 173,451**	$ 171,674	$ 169,300	$ 172,626	$ 176,244	$ 181,750	$ 180,628	$ 179,471
Reconciliation of period-end shareholders' equity to period-end tangible shareholders' equity and period-end tangible common shareholders' equity								
Shareholders' equity	**$ 273,197**	$ 269,524	$ 269,118	$ 266,617	$ 270,066	$ 272,464	$ 277,119	$ 274,000
Goodwill	**(69,022)**	(69,022)	(69,022)	(69,022)	(69,022)	(69,023)	(69,023)	(68,951)
Intangible assets (excluding MSRs)	**(2,075)**	(2,094)	(2,114)	(2,133)	(2,153)	(2,172)	(2,192)	(2,134)
Related deferred tax liabilities	**899**	915	920	926	929	913	915	915
Tangible shareholders' equity	**$ 202,999**	$ 199,323	$ 198,902	$ 196,388	$ 199,820	$ 202,182	$ 206,819	$ 203,830
Preferred stock	**(28,397)**	(29,134)	(29,134)	(27,137)	(24,708)	(23,441)	(23,441)	(24,319)
Tangible common shareholders' equity	**$ 174,602**	$ 170,189	$ 169,768	$ 169,251	$ 175,112	$ 178,741	$ 183,378	$ 179,511
Reconciliation of period-end assets to period-end tangible assets								
Assets	**$3,051,375**	$3,072,953	$3,111,606	$3,238,223	$3,169,495	$3,085,446	$3,029,894	$2,969,992
Goodwill	**(69,022)**	(69,022)	(69,022)	(69,022)	(69,022)	(69,023)	(69,023)	(68,951)
Intangible assets (excluding MSRs)	**(2,075)**	(2,094)	(2,114)	(2,133)	(2,153)	(2,172)	(2,192)	(2,134)
Related deferred tax liabilities	**899**	915	920	926	929	913	915	915
Tangible assets	**$2,981,177**	$3,002,752	$3,041,390	$3,167,994	$3,099,249	$3,015,164	$2,959,594	$2,899,822

[1] Presents reconciliations of non-GAAP financial measures to GAAP financial measures. For more information on non-GAAP financial measures and ratios we use in assessing the results of the Corporation, see Supplemental Financial Data on page 32.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

See Market Risk Management on page 75 in the MD&A and the sections referenced therein for Quantitative and Qualitative Disclosures about Market Risk.

Item 8. Financial Statements and Supplementary Data

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Report of Management on Internal Control Over Financial Reporting

The management of Bank of America Corporation is responsible for establishing and maintaining adequate internal control over financial reporting.

The Corporation's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. The Corporation's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Corporation; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the Corporation are being made only in accordance with authorizations of management and directors of the Corporation; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Corporation's assets that could have a material effect on the financial statements.

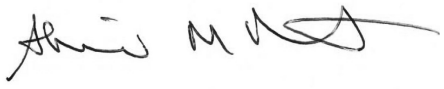
Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2022 based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework (2013)*. Based on that assessment, management concluded that, as of December 31, 2022, the Corporation's internal control over financial reporting is effective.

The Corporation's internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers, LLP, an independent registered public accounting firm, as stated in their accompanying report which expresses an unqualified opinion on the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2022.



Brian T. Moynihan
Chair, Chief Executive Officer and President



Alastair M. Borthwick
Chief Financial Officer

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Bank of America Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Bank of America Corporation and its subsidiaries (the "Corporation") as of December 31, 2022 and 2021, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Corporation's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Corporation as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Corporation changed the manner in which it accounts for credit losses on certain financial instruments in 2020.

Basis for Opinions

The Corporation's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Corporation's consolidated financial statements and on the Corporation's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Allowance for Loan and Lease Losses - Commercial and Consumer Card Loans

As described in Notes 1 and 5 to the consolidated financial statements, the allowance for loan and lease losses represents management's estimate of the expected credit losses in the Corporation's loan and lease portfolio, excluding loans and unfunded lending commitments accounted for under the fair

value option. As of December 31, 2022, the allowance for loan and lease losses was $12.7 billion on total loans and leases of $1,040.0 billion, which excludes loans accounted for under the fair value option. For commercial and consumer card loans, the expected credit loss is typically estimated using quantitative methods that consider a variety of factors such as historical loss experience, the current credit quality of the portfolio as well as an economic outlook over the life of the loan. In its loss forecasting framework, the Corporation incorporates forward looking information through the use of macroeconomic scenarios applied over the forecasted life of the assets. These macroeconomic scenarios include variables that have historically been key drivers of increases and decreases in credit losses. These variables include, but are not limited to, unemployment rates, real estate prices, gross domestic product levels and corporate bond spreads. The scenarios that are chosen and the weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, views of internal as well as third-party economists and industry trends. Also included in the allowance for loan and lease losses are qualitative reserves to cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the quantitative methods or the economic assumptions. Factors that the Corporation considers include changes in lending policies and procedures, business conditions, the nature and size of the portfolio, portfolio concentrations, the volume and severity of past due loans and nonaccrual loans, the effect of external factors such as competition, and legal and regulatory requirements, among others. Further, the Corporation considers the inherent uncertainty in quantitative models that are built on historical data.

The principal considerations for our determination that performing procedures relating to the allowance for loan and lease losses for the commercial and consumer card portfolios is a critical audit matter are (i) the significant judgment and estimation by management in developing lifetime economic forecast scenarios, related weightings to each scenario and certain qualitative reserves, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and in evaluating audit evidence obtained, and (ii) the audit effort involved professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the allowance for loan and lease losses, including controls over the evaluation and approval of models, forecast scenarios and related weightings, and qualitative reserves. These procedures also included, among others, testing management's process for estimating the allowance for loan and lease losses, including (i) evaluating the appropriateness of the loss forecast models and methodology, (ii) evaluating the reasonableness of certain macroeconomic variables, (iii) evaluating the reasonableness of management's development, selection and weighting of lifetime economic forecast scenarios used in the loss forecast models, (iv) testing the completeness and accuracy of data used in the estimate, and (v) evaluating the reasonableness of certain qualitative reserves made to the model output results to determine the overall allowance for loan and lease losses. The procedures also included the involvement of professionals with specialized skill and knowledge to assist in evaluating the appropriateness of certain loss forecast models, the reasonableness of economic forecast scenarios and related weightings and the reasonableness of certain qualitative reserves.

Valuation of Certain Level 3 Financial Instruments

As described in Notes 1 and 20 to the consolidated financial statements, the Corporation carries certain financial instruments at fair value, which includes $10.7 billion of assets and $7.1 billion of liabilities classified as Level 3 fair value measurements that are valued on a recurring basis and $3.4 billion of assets classified as Level 3 fair value measurements that are valued on a nonrecurring basis, for which the determination of fair value requires significant management judgment or estimation. The Corporation determines the fair value of Level 3 financial instruments using pricing models, discounted cash flow methodologies, or similar techniques that require inputs that are both unobservable and are significant to the overall fair value measurement. Unobservable inputs, such as volatility or implied yield, may be determined using quantitative-based extrapolations, pricing models or other internal methodologies which incorporate management estimates and available market information.

The principal considerations for our determination that performing procedures relating to the valuation of certain Level 3 financial instruments is a critical audit matter are the significant judgment and estimation used by management to determine the fair value of these financial instruments, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and in evaluating audit evidence obtained, including the involvement of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of financial instruments, including controls related to valuation models, significant unobservable inputs, and data. These procedures also included, among others, the involvement of professionals with specialized skill and knowledge to assist in developing an independent estimate of fair value for a sample of these certain financial instruments and comparison of management's estimate to the independently developed estimate of fair value. Developing the independent estimate involved testing the completeness and accuracy of data provided by management and evaluating the reasonableness of management's significant unobservable inputs.



Charlotte, North Carolina
February 22, 2023

We have served as the Corporation's auditor since 1958.

Consolidated Statement of Income

(In millions, except per share information)	2022	2021	2020
Net interest income			
Interest income	**$ 72,565**	$ 47,672	$ 51,585
Interest expense	**20,103**	4,738	8,225
Net interest income	**52,462**	42,934	43,360
Noninterest income			
Fees and commissions	**33,212**	39,299	34,551
Market making and similar activities	**12,075**	8,691	8,355
Other income	**(2,799)**	(1,811)	(738)
Total noninterest income	**42,488**	46,179	42,168
Total revenue, net of interest expense	**94,950**	89,113	85,528
Provision for credit losses	**2,543**	(4,594)	11,320
Noninterest expense			
Compensation and benefits	**36,447**	36,140	32,725
Occupancy and equipment	**7,071**	7,138	7,141
Information processing and communications	**6,279**	5,769	5,222
Product delivery and transaction related	**3,653**	3,881	3,433
Professional fees	**2,142**	1,775	1,694
Marketing	**1,825**	1,939	1,701
Other general operating	**4,021**	3,089	3,297
Total noninterest expense	**61,438**	59,731	55,213
Income before income taxes	**30,969**	33,976	18,995
Income tax expense	**3,441**	1,998	1,101
Net income	**$ 27,528**	$ 31,978	$ 17,894
Preferred stock dividends and other	**1,513**	1,421	1,421
Net income applicable to common shareholders	**$ 26,015**	$ 30,557	$ 16,473
Per common share information			
Earnings	**$ 3.21**	$ 3.60	$ 1.88
Diluted earnings	**3.19**	3.57	1.87
Average common shares issued and outstanding	**8,113.7**	8,493.3	8,753.2
Average diluted common shares issued and outstanding	**8,167.5**	8,558.4	8,796.9

Consolidated Statement of Comprehensive Income

(Dollars in millions)	2022	2021	2020
Net income	**$ 27,528**	$ 31,978	$ 17,894
Other comprehensive income (loss), net-of-tax:			
Net change in debt securities	**(6,028)**	(2,077)	4,799
Net change in debit valuation adjustments	**755**	356	(498)
Net change in derivatives	**(10,055)**	(2,306)	826
Employee benefit plan adjustments	**(667)**	624	(98)
Net change in foreign currency translation adjustments	**(57)**	(45)	(52)
Other comprehensive income (loss)	**(16,052)**	(3,448)	4,977
Comprehensive income (loss)	**$ 11,476**	$ 28,530	$ 22,871

See accompanying Notes to Consolidated Financial Statements.

Consolidated Balance Sheet

(Dollars in millions)	December 31 2022	2021
Assets		
Cash and due from banks	$ **30,334**	$ 29,222
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	**199,869**	318,999
Cash and cash equivalents	**230,203**	348,221
Time deposits placed and other short-term investments	**7,259**	7,144
Federal funds sold and securities borrowed or purchased under agreements to resell (includes **$146,999** and $150,665 measured at fair value)	**267,574**	250,720
Trading account assets (includes **$115,505** and $103,434 pledged as collateral)	**296,108**	247,080
Derivative assets	**48,642**	35,344
Debt securities:		
Carried at fair value	**229,994**	308,073
Held-to-maturity, at cost (fair value – **$524,267** and $665,890)	**632,825**	674,554
Total debt securities	**862,819**	982,627
Loans and leases (includes **$5,771** and $7,819 measured at fair value)	**1,045,747**	979,124
Allowance for loan and lease losses	**(12,682)**	(12,387)
Loans and leases, net of allowance	**1,033,065**	966,737
Premises and equipment, net	**11,510**	10,833
Goodwill	**69,022**	69,022
Loans held-for-sale (includes **$1,115** and $4,455 measured at fair value)	**6,871**	15,635
Customer and other receivables	**67,543**	72,263
Other assets (includes **$9,594** and $12,144 measured at fair value)	**150,759**	163,869
Total assets	$ **3,051,375**	$ 3,169,495
Liabilities		
Deposits in U.S. offices:		
Noninterest-bearing	$ **640,745**	$ 784,189
Interest-bearing (includes **$311** and $408 measured at fair value)	**1,182,590**	1,165,914
Deposits in non-U.S. offices:		
Noninterest-bearing	**20,480**	27,457
Interest-bearing	**86,526**	86,886
Total deposits	**1,930,341**	2,064,446
Federal funds purchased and securities loaned or sold under agreements to repurchase (includes **$151,708** and $139,641 measured at fair value)	**195,635**	192,329
Trading account liabilities	**80,399**	100,690
Derivative liabilities	**44,816**	37,675
Short-term borrowings (includes **$832** and $4,279 measured at fair value)	**26,932**	23,753
Accrued expenses and other liabilities (includes **$9,752** and $11,489 measured at fair value and **$1,540** and $1,456 of reserve for unfunded lending commitments)	**224,073**	200,419
Long-term debt (includes **$33,070** and $29,708 measured at fair value)	**275,982**	280,117
Total liabilities	**2,778,178**	2,899,429
Commitments and contingencies *(Note 6 – Securitizations and Other Variable Interest Entities and Note 12 – Commitments and Contingencies)*		
Shareholders' equity		
Preferred stock, $0.01 par value; authorized – **100,000,000** shares; issued and outstanding – **4,088,101** and 3,939,686 shares	**28,397**	24,708
Common stock and additional paid-in capital, $0.01 par value; authorized – **12,800,000,000** shares; issued and outstanding – **7,996,777,943** and 8,077,831,463 shares	**58,953**	62,398
Retained earnings	**207,003**	188,064
Accumulated other comprehensive income (loss)	**(21,156)**	(5,104)
Total shareholders' equity	**273,197**	270,066
Total liabilities and shareholders' equity	$ **3,051,375**	$ 3,169,495
Assets of consolidated variable interest entities included in total assets above (isolated to settle the liabilities of the variable interest entities)		
Trading account assets	$ **2,816**	$ 5,004
Loans and leases	**16,738**	17,135
Allowance for loan and lease losses	**(797)**	(958)
Loans and leases, net of allowance	**15,941**	16,177
All other assets	**116**	189
Total assets of consolidated variable interest entities	$ **18,873**	$ 21,370
Liabilities of consolidated variable interest entities included in total liabilities above		
Short-term borrowings (includes **$42** and $51 of non-recourse short-term borrowings)	$ **42**	$ 247
Long-term debt (includes **$4,581** and $3,587 of non-recourse debt)	**4,581**	3,587
All other liabilities (includes **$13** and $7 of non-recourse liabilities)	**13**	7
Total liabilities of consolidated variable interest entities	$ **4,636**	$ 3,841

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statement of Changes in Shareholders' Equity

(In millions)	Preferred Stock	Common Stock and Additional Paid-in Capital Shares	Common Stock and Additional Paid-in Capital Amount	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
Balance, December 31, 2019	$ 23,401	8,836.1	$ 91,723	$ 156,319	$ (6,633)	$ 264,810
Cumulative adjustment for adoption of credit loss accounting standard				(2,406)		(2,406)
Net income				17,894		17,894
Net change in debt securities					4,799	4,799
Net change in debit valuation adjustments					(498)	(498)
Net change in derivatives					826	826
Employee benefit plan adjustments					(98)	(98)
Net change in foreign currency translation adjustments					(52)	(52)
Dividends declared:						
Common				(6,289)		(6,289)
Preferred				(1,421)		(1,421)
Issuance of preferred stock	2,181					2,181
Redemption of preferred stock	(1,072)					(1,072)
Common stock issued under employee plans, net, and other		41.7	1,284	(9)		1,275
Common stock repurchased		(227.0)	(7,025)			(7,025)
Balance, December 31, 2020	$ 24,510	8,650.8	$ 85,982	$ 164,088	$ (1,656)	$ 272,924
Net income				31,978		31,978
Net change in debt securities					(2,077)	(2,077)
Net change in debit valuation adjustments					356	356
Net change in derivatives					(2,306)	(2,306)
Employee benefit plan adjustments					624	624
Net change in foreign currency translation adjustments					(45)	(45)
Dividends declared:						
Common				(6,575)		(6,575)
Preferred				(1,421)		(1,421)
Issuance of preferred stock	2,169					2,169
Redemption of preferred stock	(1,971)					(1,971)
Common stock issued under employee plans, net, and other		42.3	1,542	(6)		1,536
Common stock repurchased		(615.3)	(25,126)			(25,126)
Balance, December 31, 2021	$ 24,708	8,077.8	$ 62,398	$ 188,064	$ (5,104)	$ 270,066
Net income				**27,528**		**27,528**
Net change in debt securities					**(6,028)**	**(6,028)**
Net change in debit valuation adjustments					**755**	**755**
Net change in derivatives					**(10,055)**	**(10,055)**
Employee benefit plan adjustments					**(667)**	**(667)**
Net change in foreign currency translation adjustments					**(57)**	**(57)**
Dividends declared:						
Common				**(6,963)**		**(6,963)**
Preferred				**(1,596)**		**(1,596)**
Issuance of preferred stock	**4,426**					**4,426**
Redemption of preferred stock	**(737)**		**83**			**(654)**
Common stock issued under employee plans, net, and other		**44.9**	**1,545**	**(30)**		**1,515**
Common stock repurchased		**(125.9)**	**(5,073)**			**(5,073)**
Balance, December 31, 2022	**$ 28,397**	**7,996.8**	**$ 58,953**	**$ 207,003**	**$ (21,156)**	**$ 273,197**

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statement of Cash Flows

(Dollars in millions)	2022	2021	2020
Operating activities			
Net income	**$ 27,528**	$ 31,978	$ 17,894
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	**2,543**	(4,594)	11,320
Gains on sales of debt securities	**(32)**	(22)	(411)
Depreciation and amortization	**1,978**	1,898	1,843
Net amortization of premium/discount on debt securities	**2,072**	5,837	4,101
Deferred income taxes	**739**	(838)	(1,737)
Stock-based compensation	**2,862**	2,768	2,031
Loans held-for-sale:			
Originations and purchases	**(24,862)**	(43,635)	(19,657)
Proceeds from sales and paydowns of loans originally classified as held for sale and instruments from related securitization activities	**31,567**	34,684	19,049
Net change in:			
Trading and derivative assets/liabilities	**(95,772)**	(22,104)	16,942
Other assets	**20,799**	(34,455)	(12,883)
Accrued expenses and other liabilities	**23,029**	16,639	(4,385)
Other operating activities, net	**1,222**	4,651	3,886
Net cash provided by (used in) operating activities	**(6,327)**	(7,193)	37,993
Investing activities			
Net change in:			
Time deposits placed and other short-term investments	**(115)**	(598)	561
Federal funds sold and securities borrowed or purchased under agreements to resell	**(16,854)**	53,338	(29,461)
Debt securities carried at fair value:			
Proceeds from sales	**69,114**	6,893	77,524
Proceeds from paydowns and maturities	**110,195**	159,616	91,084
Purchases	**(134,962)**	(238,398)	(194,877)
Held-to-maturity debt securities:			
Proceeds from paydowns and maturities	**63,852**	124,880	93,835
Purchases	**(24,096)**	(362,736)	(257,535)
Loans and leases:			
Proceeds from sales of loans originally classified as held for investment and instruments from related securitization activities	**26,757**	10,396	13,351
Purchases	**(5,798)**	(5,164)	(5,229)
Other changes in loans and leases, net	**(86,010)**	(58,039)	36,571
Other investing activities, net	**(4,612)**	(3,479)	(3,489)
Net cash used in investing activities	**(2,529)**	(313,291)	(177,665)
Financing activities			
Net change in:			
Deposits	**(134,190)**	268,966	360,677
Federal funds purchased and securities loaned or sold under agreements to repurchase	**3,306**	22,006	5,214
Short-term borrowings	**3,179**	4,432	(4,893)
Long-term debt:			
Proceeds from issuance	**65,910**	76,675	57,013
Retirement	**(34,055)**	(46,826)	(47,948)
Preferred stock:			
Proceeds from issuance	**4,426**	2,169	2,181
Redemption	**(654)**	(1,971)	(1,072)
Common stock repurchased	**(5,073)**	(25,126)	(7,025)
Cash dividends paid	**(8,576)**	(8,055)	(7,727)
Other financing activities, net	**(312)**	(620)	(601)
Net cash provided by (used in) financing activities	**(106,039)**	291,650	355,819
Effect of exchange rate changes on cash and cash equivalents	**(3,123)**	(3,408)	2,756
Net increase (decrease) in cash and cash equivalents	**(118,018)**	(32,242)	218,903
Cash and cash equivalents at January 1	**348,221**	380,463	161,560
Cash and cash equivalents at December 31	**$ 230,203**	$ 348,221	$ 380,463
Supplemental cash flow disclosures			
Interest paid	**$ 18,526**	$ 4,506	$ 8,662
Income taxes paid, net	**2,288**	2,760	2,894

See accompanying Notes to Consolidated Financial Statements.

NOTE 1 Summary of Significant Accounting Principles

Bank of America Corporation, a bank holding company and a financial holding company, provides a diverse range of financial services and products throughout the U.S. and in certain international markets. The term "the Corporation" as used herein may refer to Bank of America Corporation, individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates.

Principles of Consolidation and Basis of Presentation

The Consolidated Financial Statements include the accounts of the Corporation and its majority-owned subsidiaries and those variable interest entities (VIEs) where the Corporation is the primary beneficiary. Intercompany accounts and transactions have been eliminated. Results of operations of acquired companies are included from the dates of acquisition, and for VIEs, from the dates that the Corporation became the primary beneficiary. Assets held in an agency or fiduciary capacity are not included in the Consolidated Financial Statements. The Corporation accounts for investments in companies for which it owns a voting interest and for which it has the ability to exercise significant influence over operating and financing decisions using the equity method of accounting. These investments, which include the Corporation's interests in affordable housing and renewable energy partnerships, are recorded in other assets. Equity method investments are subject to impairment testing, and the Corporation's proportionate share of income or loss is included in other income.

The preparation of the Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results could materially differ from those estimates and assumptions. Certain prior-period amounts have been reclassified to conform to current period presentation.

New Accounting Standards

Hedge Accounting

The FASB issued a new accounting standard that makes targeted improvements to the application of the fair value hedge accounting guidance for closed portfolios of financial assets. The targeted improvements were effective January 1, 2023 on a prospective basis.

Financial Instruments – Credit Losses

The FASB amended the accounting and disclosure requirements for expected credit losses (ECL) by removing the recognition and measurement guidance on troubled debt restructurings (TDRs) and adding disclosures on the financial effect and subsequent performance of certain types of modifications made to borrowers experiencing financial difficulties. The effects of these changes on the Corporation's consolidated financial position, results of operations or disclosures in the Notes to the Consolidated Financial Statements are not significant. The amendments were effective on January 1, 2023, which the Corporation adopted using a modified retrospective approach.

Significant Accounting Principles

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, cash items in the process of collection, cash segregated under federal and other brokerage regulations, and amounts due from correspondent banks, the Federal Reserve Bank and certain non-U.S. central banks. Certain cash balances are restricted as to withdrawal or usage by legally binding contractual agreements or regulatory requirements.

Securities Financing Agreements

Securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase (securities financing agreements) are treated as collateralized financing transactions except in instances where the transaction is required to be accounted for as individual sale and purchase transactions. Generally, these agreements are recorded at acquisition or sale price plus accrued interest. In instances where the interest is negative, the Corporation's policy is to present negative interest on financial assets as interest income and negative interest on financial liabilities as interest expense. For securities financing agreements that are accounted for under the fair value option, the changes in the fair value of these securities financing agreements are recorded in market making and similar activities in the Consolidated Statement of Income.

The Corporation's policy is to monitor the market value of the principal amount loaned under resale agreements and obtain collateral from or return collateral pledged to counterparties when appropriate. Securities financing agreements do not create material credit risk due to these collateral provisions; therefore, an allowance for loan losses is not necessary.

In transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged or sold as collateral, it recognizes an asset on the Consolidated Balance Sheet at fair value, representing the securities received, and a liability, representing the obligation to return those securities.

Trading Instruments

Financial instruments utilized in trading activities are carried at fair value. Fair value is generally based on quoted market prices for the same or similar assets and liabilities. If these market prices are not available, fair values are estimated based on dealer quotes, pricing models, discounted cash flow methodologies, or similar techniques where the determination of fair value may require significant management judgment or estimation. Realized gains and losses are recorded on a trade-date basis. Realized and unrealized gains and losses are recognized in market making and similar activities.

Derivatives and Hedging Activities

Derivatives are entered into on behalf of customers, for trading or to support risk management activities. Derivatives used in risk management activities include derivatives that are both designated in qualifying accounting hedge relationships and derivatives used to hedge market risks in relationships that are not designated in qualifying accounting hedge relationships (referred to as other risk management activities). The Corporation manages interest rate and foreign currency exchange rate sensitivity predominantly through the use of derivatives. Derivatives utilized by the Corporation include swaps, futures and forward settlement contracts, and option contracts.

All derivatives are recorded on the Consolidated Balance Sheet at fair value, taking into consideration the effects of legally enforceable master netting agreements that allow the Corporation to settle positive and negative positions and offset cash collateral held with the same counterparty on a net basis. For exchange-traded contracts, fair value is based on quoted market prices in active or inactive markets or is derived from observable market-based pricing parameters, similar to those applied to over-the-counter (OTC) derivatives. For non-exchange traded contracts, fair value is based on dealer quotes, pricing models, discounted cash flow methodologies or similar techniques for which the determination of fair value may require significant management judgment or estimation.

Valuations of derivative assets and liabilities reflect the value of the instrument including counterparty credit risk. These values also take into account the Corporation's own credit standing.

Trading Derivatives and Other Risk Management Activities

Derivatives held for trading purposes are included in derivative assets or derivative liabilities on the Consolidated Balance Sheet with changes in fair value included in market making and similar activities.

Derivatives used for other risk management activities are included in derivative assets or derivative liabilities. Derivatives used in other risk management activities have not been designated in qualifying accounting hedge relationships because they did not qualify or the risk that is being mitigated pertains to an item that is reported at fair value through earnings so that the effect of measuring the derivative instrument and the asset or liability to which the risk exposure pertains will offset in the Consolidated Statement of Income to the extent effective. The changes in the fair value of derivatives that serve to mitigate certain risks associated with mortgage servicing rights (MSRs), interest rate lock commitments (IRLCs) and first-lien mortgage loans held-for-sale (LHFS) that are originated by the Corporation are recorded in other income. Changes in the fair value of derivatives that serve to mitigate interest rate risk and foreign currency risk are included in market making and similar activities. Credit derivatives are also used by the Corporation to mitigate the risk associated with various credit exposures. The changes in the fair value of these derivatives are included in market making and similar activities and other income.

Derivatives Used For Hedge Accounting Purposes (Accounting Hedges)

For accounting hedges, the Corporation formally documents at inception all relationships between hedging instruments and hedged items, as well as the risk management objectives and strategies for undertaking various accounting hedges. Additionally, the Corporation primarily uses regression analysis at the inception of a hedge and for each reporting period thereafter to assess whether the derivative used in an accounting hedge transaction is expected to be and has been highly effective in offsetting changes in the fair value or cash flows of a hedged item or forecasted transaction. The Corporation discontinues hedge accounting when it is determined that a derivative is not expected to be or has ceased to be highly effective as a hedge, and then reflects changes in fair value of the derivative in earnings after termination of the hedge relationship.

Fair value hedges are used to protect against changes in the fair value of the Corporation's assets and liabilities that are attributable to interest rate or foreign exchange volatility. Changes in the fair value of derivatives designated as fair value hedges are recorded in earnings, together and in the same income statement line item with changes in the fair value of the related hedged item. If a derivative instrument in a fair value hedge is terminated or the hedge designation removed, the previous adjustments to the carrying value of the hedged asset or liability are subsequently accounted for in the same manner as other components of the carrying value of that asset or liability. For interest-earning assets and interest-bearing liabilities, such adjustments are amortized to earnings over the remaining life of the respective asset or liability.

Cash flow hedges are used primarily to minimize the variability in cash flows of assets and liabilities or forecasted transactions caused by interest rate or foreign exchange rate fluctuations. The Corporation also uses cash flow hedges to hedge the price risk associated with deferred compensation. Changes in the fair value of derivatives used in cash flow hedges are recorded in accumulated other comprehensive income (OCI) and are reclassified into the line item in the income statement in which the hedged item is recorded in the same period the hedged item affects earnings. Components of a derivative that are excluded in assessing hedge effectiveness are recorded in the same income statement line item as the hedged item.

Net investment hedges are used to manage the foreign exchange rate sensitivity arising from a net investment in a foreign operation. Changes in the spot prices of derivatives that are designated as net investment hedges of foreign operations are recorded as a component of accumulated OCI. The remaining components of these derivatives are excluded in assessing hedge effectiveness and are recorded in market making and similar activities.

Securities

Debt securities are reported on the Consolidated Balance Sheet at their trade date. Their classification is dependent on the purpose for which the securities were acquired. Debt securities purchased for use in the Corporation's trading activities are reported in trading account assets at fair value with unrealized gains and losses included in market making and similar activities. Substantially all other debt securities purchased are used in the Corporation's asset and liability management (ALM) activities and are reported on the Consolidated Balance Sheet as either debt securities carried at fair value or as held-to-maturity (HTM) debt securities. Debt securities carried at fair value are either available-for-sale (AFS) securities with unrealized gains and losses net-of-tax included in accumulated OCI or carried at fair value with unrealized gains and losses reported in market making and similar activities. HTM debt securities are debt securities that management has the intent and ability to hold to maturity and are reported at amortized cost.

The Corporation evaluates each AFS security where the value has declined below amortized cost. If the Corporation intends to sell or believes it is more likely than not that it will be required to sell the debt security, it is written down to fair value through earnings. For AFS debt securities the Corporation intends to hold, the Corporation evaluates the debt securities for ECL, except for debt securities that are guaranteed by the U.S. Treasury, U.S. government agencies or sovereign entities of high credit quality where the Corporation applies a zero credit loss assumption. For the remaining AFS debt securities, the Corporation considers qualitative parameters such as internal and external credit ratings and the value of underlying collateral. If an AFS debt security fails any of the qualitative parameters, a discounted cash flow analysis is used by the Corporation to

determine if a portion of the unrealized loss is a result of an ECL. The Corporation will then recognize either credit loss expense or a reversal of credit loss expense in other income for the amount necessary to adjust the debt securities valuation allowance to its current estimate of expected credit losses. Cash flows expected to be collected are estimated using all relevant information available such as remaining payment terms, prepayment speeds, the financial condition of the issuer, expected defaults and the value of the underlying collateral. If any of the decline in fair value is related to market factors, that amount is recognized in accumulated OCI. In certain instances, the credit loss may exceed the total decline in fair value, in which case, the allowance recorded is limited to the difference between the amortized cost and the fair value of the asset.

The Corporation separately evaluates its HTM debt securities for any credit losses, of which substantially all qualify for the zero loss assumption. For the remaining securities, the Corporation performs a discounted cash flow analysis to estimate any credit losses which are then recognized as part of the allowance for credit losses.

Interest on debt securities, including amortization of premiums and accretion of discounts, is included in interest income. Premiums and discounts are amortized or accreted to interest income at a constant effective yield over the contractual lives of the securities. Realized gains and losses from the sales of debt securities are determined using the specific identification method.

Equity securities with readily determinable fair values that are not held for trading purposes are carried at fair value with unrealized gains and losses included in other income. Equity securities that do not have readily determinable fair values are recorded at cost less impairment, if any, plus or minus qualifying observable price changes. These securities are reported in other assets.

Loans and Leases

Loans, with the exception of loans accounted for under the fair value option, are measured at historical cost and reported at their outstanding principal balances net of any unearned income, charge-offs, unamortized deferred fees and costs on originated loans, and for purchased loans, net of any unamortized premiums or discounts. Loan origination fees and certain direct origination costs are deferred and recognized as adjustments to interest income over the lives of the related loans. Unearned income, discounts and premiums are amortized to interest income using a level yield methodology. The Corporation elects to account for certain consumer and commercial loans under the fair value option with interest reported in interest income and changes in fair value reported in market making and similar activities or other income.

Under applicable accounting guidance, for reporting purposes, the loan and lease portfolio is categorized by portfolio segment and, within each portfolio segment, by class of financing receivable. A portfolio segment is defined as the level at which an entity develops and documents a systematic methodology to determine the allowance for credit losses, and a class of financing receivable is defined as the level of disaggregation of portfolio segments based on the initial measurement attribute, risk characteristics and methods for assessing risk. The Corporation's three portfolio segments are Consumer Real Estate, Credit Card and Other Consumer, and Commercial. The classes within the Consumer Real Estate portfolio segment are residential mortgage and home equity. The classes within the Credit Card and Other Consumer portfolio segment are credit card, direct/indirect consumer and other consumer. The classes within the Commercial portfolio segment are U.S. commercial, non-U.S. commercial, commercial real estate, commercial lease financing and U.S. small business commercial.

Leases

The Corporation provides equipment financing to its customers through a variety of lessor arrangements. Direct financing leases and sales-type leases are carried at the aggregate of lease payments receivable plus the estimated residual value of the leased property less unearned income, which is accreted to interest income over the lease terms using methods that approximate the interest method. Operating lease income is recognized on a straight-line basis. The Corporation's lease arrangements generally do not contain non-lease components.

Allowance for Credit Losses

On January 1, 2020, the Corporation adopted the new accounting standard that requires the measurement of the allowance for credit losses, which includes both the allowance for loan and lease losses and the reserve for unfunded lending commitments, to be based on management's best estimate of the ECL in the Corporation's loan and lease portfolio, excluding loans and unfunded lending commitments accounted for under the fair value option. Upon adoption, a $3.3 billion, or 32 percent, increase in the allowance for credit losses was recorded on January 1, 2020, which was comprised of a net increase of $2.9 billion in the allowance for loan and lease losses and a $310 million increase in the reserve for unfunded lending commitments. The ECL on funded consumer and commercial loans and leases is referred to as the allowance for loan and lease losses and is reported separately as a contra-asset to loans and leases on the Consolidated Balance Sheet. The ECL for unfunded lending commitments, including home equity lines of credit (HELOCs), standby letters of credit (SBLCs) and binding unfunded loan commitments is reported on the Consolidated Balance Sheet in accrued expenses and other liabilities. The provision for credit losses related to the loan and lease portfolio and unfunded lending commitments is reported in the Consolidated Statement of Income at the amount necessary to adjust the allowance for credit losses to the current estimate of ECL.

For loans and leases, the ECL is typically estimated using quantitative methods that consider a variety of factors such as historical loss experience, the current credit quality of the portfolio as well as an economic outlook over the life of the loan. The life of the loan for closed-ended products is based on the contractual maturity of the loan adjusted for any expected prepayments. The contractual maturity includes any extension options that are at the sole discretion of the borrower. For open-ended products (e.g., lines of credit), the ECL is determined based on the maximum repayment term associated with future draws from credit lines unless those lines of credit are unconditionally cancellable (e.g., credit cards) in which case the Corporation does not record any allowance.

In its loss forecasting framework, the Corporation incorporates forward-looking information through the use of macroeconomic scenarios applied over the forecasted life of the assets. These macroeconomic scenarios include variables that have historically been key drivers of increases and decreases in credit losses. These variables include, but are not limited to, unemployment rates, real estate prices, gross domestic product levels and corporate bond spreads. As any one economic outlook is inherently uncertain, the Corporation leverages multiple scenarios. The scenarios that are chosen each quarter

and the weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, views of internal and third-party economists and industry trends.

The estimate of credit losses includes expected recoveries of amounts previously charged off (i.e., negative allowance). If a loan has been charged off, the expected cash flows on the loan are not limited by the current amortized cost balance. Instead, expected cash flows can be assumed up to the unpaid principal balance immediately prior to the charge-off.

The allowance for loan and lease losses for TDRs is measured based on the present value of projected future lifetime principal and interest cash flows discounted at the loan's original effective interest rate, or in cases where foreclosure is probable or the loan is collateral dependent, at the loan's collateral value or its observable market price, if available. The measurement of ECL for the renegotiated consumer credit card TDR portfolio is based on the present value of projected cash flows discounted using the average TDR portfolio contractual interest rate, excluding promotionally priced loans, in effect prior to restructuring. Projected cash flows for TDRs use the same economic outlook as discussed above. For purposes of computing this specific loss component of the allowance, larger impaired loans are evaluated individually and smaller impaired loans are evaluated as a pool.

Also included in the allowance for loan and lease losses are qualitative reserves to cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the quantitative methods or the economic assumptions described above. For example, factors that the Corporation considers include changes in lending policies and procedures, business conditions, the nature and size of the portfolio, portfolio concentrations, the volume and severity of past due loans and nonaccrual loans, the effect of external factors such as competition, and legal and regulatory requirements, among others. Further, the Corporation considers the inherent uncertainty in quantitative models that are built on historical data.

With the exception of the Corporation's credit card portfolio, the Corporation does not include reserves for interest receivable in the measurement of the allowance for credit losses as the Corporation generally classifies consumer loans as nonperforming at 90 days past due and reverses interest income for these loans at that time. For credit card loans, the Corporation reserves for interest and fees as part of the allowance for loan and lease losses. Upon charge-off of a credit card loan, the Corporation reverses the interest and fee income against the income statement line item where it was originally recorded.

The Corporation has identified the following three portfolio segments and measures the allowance for credit losses using the following methods.

Consumer Real Estate

To estimate ECL for consumer loans secured by residential real estate, the Corporation estimates the number of loans that will default over the life of the existing portfolio, after factoring in estimated prepayments, using quantitative modeling methodologies. The attributes that are most significant in estimating the Corporation's ECL include refreshed loan-to-value (LTV) or, in the case of a subordinated lien, refreshed combined LTV (CLTV), borrower credit score, months since origination and geography, all of which are further broken down by present collection status (whether the loan is current, delinquent, in default, or in bankruptcy). The estimates are based on the Corporation's historical experience with the loan portfolio, adjusted to reflect the economic outlook. The outlook on the unemployment rate and consumer real estate prices are key factors that impact the frequency and severity of loss estimates. The Corporation does not reserve for credit losses on the unpaid principal balance of loans insured by the Federal Housing Administration (FHA) and long-term standby loans, as these loans are fully insured. The Corporation records a reserve for unfunded lending commitments for the ECL associated with the undrawn portion of the Corporation's HELOCs, which can only be canceled by the Corporation if certain criteria are met. The ECL associated with these unfunded lending commitments is calculated using the same models and methodologies noted above and incorporate utilization assumptions at time of default.

For loans that are more than 180 days past due and collateral-dependent TDRs, the Corporation bases the allowance on the estimated fair value of the underlying collateral as of the reporting date less costs to sell. The fair value of the collateral securing these loans is generally determined using an automated valuation model (AVM) that estimates the value of a property by reference to market data including sales of comparable properties and price trends specific to the Metropolitan Statistical Area in which the property being valued is located. In the event that an AVM value is not available, the Corporation utilizes publicized indices or if these methods provide less reliable valuations, the Corporation uses appraisals or broker price opinions to estimate the fair value of the collateral. While there is inherent imprecision in these valuations, the Corporation believes that they are representative of this portfolio in the aggregate.

For loans that are more than 180 days past due and collateral-dependent TDRs, with the exception of the Corporation's fully insured portfolio, the outstanding balance of loans that is in excess of the estimated property value after adjusting for costs to sell is charged off. If the estimated property value decreases in periods subsequent to the initial charge-off, the Corporation will record an additional charge-off; however, if the value increases in periods subsequent to the charge-off, the Corporation will adjust the allowance to account for the increase but not to a level above the cumulative charge-off amount.

Credit Cards and Other Consumer

Credit cards are revolving lines of credit without a defined maturity date. The estimated life of a credit card receivable is determined by estimating the amount and timing of expected future payments (e.g., borrowers making full payments, minimum payments or somewhere in between) that it will take for a receivable balance to pay off. The ECL on the future payments incorporates the spending behavior of a borrower through time using key borrower-specific factors and the economic outlook described above. The Corporation applies all expected payments in accordance with the Credit Card Accountability Responsibility and Disclosure Act of 2009 (i.e., paying down the highest interest rate bucket first). Then forecasted future payments are prioritized to pay off the oldest balance until it is brought to zero or an expected charge-off amount. Unemployment rate outlook, borrower credit score, delinquency status and historical payment behavior are all key inputs into the credit card receivable loss forecasting model. Future draws on the credit card lines are excluded from the ECL as they are unconditionally cancellable.

The ECL for the consumer vehicle lending portfolio is also determined using quantitative methods supplemented with

qualitative analysis. The quantitative model estimates ECL giving consideration to key borrower and loan characteristics such as delinquency status, borrower credit score, LTV ratio, underlying collateral type and collateral value.

Commercial

The ECL on commercial loans is forecasted using models that estimate credit losses over the loan's contractual life at an individual loan level. The models use the contractual terms to forecast future principal cash flows while also considering expected prepayments. For open-ended commitments such as revolving lines of credit, changes in funded balance are captured by forecasting a borrower's draw and payment behavior over the remaining life of the commitment. For loans collateralized with commercial real estate and for which the underlying asset is the primary source of repayment, the loss forecasting models consider key loan and customer attributes such as LTV ratio, net operating income and debt service coverage, and captures variations in behavior according to property type and region. The outlook on the unemployment rate, gross domestic product, and forecasted real estate prices are utilized to determine indicators such as rent levels and vacancy rates, which impact the ECL estimate. For all other commercial loans and leases, the loss forecasting model determines the probabilities of transition to different credit risk ratings or default at each point over the life of the asset based on the borrower's current credit risk rating, industry sector, size of the exposure and the geographic market. The severity of loss is determined based on the type of collateral securing the exposure, the size of the exposure, the borrower's industry sector, any guarantors and the geographic market. Assumptions of expected loss are conditioned to the economic outlook, and the model considers key economic variables such as unemployment rate, gross domestic product, corporate bond spreads, real estate and other asset prices and equity market returns.

In addition to the allowance for loan and lease losses, the Corporation also estimates ECL related to unfunded lending commitments such as letters of credit, financial guarantees, unfunded bankers acceptances and binding loan commitments, excluding commitments accounted for under the fair value option. Reserves are estimated for the unfunded exposure using the same models and methodologies as the funded exposure and are reported as reserves for unfunded lending commitments.

Nonperforming Loans and Leases, Charge-offs and Delinquencies

Nonperforming loans and leases generally include loans and leases that have been placed on nonaccrual status. Loans accounted for under the fair value option and LHFS are not reported as nonperforming. When a nonaccrual loan is deemed uncollectible, it is charged off against the allowance for credit losses. If the charged-off amount is later recovered, the amount is reversed through the allowance for credit losses at the recovery date. Charge-offs are reported net of recoveries (net charge-offs). If recoveries for the period are greater than charge-offs, net charge-offs are reported as a negative amount.

In accordance with the Corporation's policies, consumer real estate-secured loans, including residential mortgages and home equity loans, are generally placed on nonaccrual status and classified as nonperforming at 90 days past due unless repayment of the loan is insured by the FHA or through individually insured long-term standby agreements with Fannie Mae (FNMA) or Freddie Mac (FHLMC) (the fully-insured portfolio). Residential mortgage loans in the fully-insured portfolio are not placed on nonaccrual status and, therefore, are not reported as nonperforming. Junior-lien home equity loans are placed on nonaccrual status and classified as nonperforming when the underlying first-lien mortgage loan becomes 90 days past due even if the junior-lien loan is current. The outstanding balance of real estate-secured loans that is in excess of the estimated property value less costs to sell is charged off no later than the end of the month in which the loan becomes 180 days past due unless the loan is fully insured, or for loans in bankruptcy, within 60 days of receipt of notification of filing, with the remaining balance classified as nonperforming.

Credit card and other unsecured consumer loans are charged off when the loan becomes 180 days past due, within 60 days after receipt of notification of death or bankruptcy or upon confirmation of fraud. These loans continue to accrue interest until they are charged off and, therefore, are not reported as nonperforming loans. Consumer vehicle loans are placed on nonaccrual status when they become 90 days past due, within 60 days after receipt of notification of bankruptcy or death or upon confirmation of fraud. These loans are charged off to their collateral values when the loans become 120 days past due, upon repossession of the collateral, within 60 days after receipt of notification of bankruptcy or death or upon confirmation of fraud. If repossession of the collateral is not expected, the loans are fully charged off.

Commercial loans and leases, excluding business card loans, that are past due 90 days or more as to principal or interest, or where reasonable doubt exists as to timely collection, including loans that are individually identified as being impaired, are generally placed on nonaccrual status and classified as nonperforming unless well-secured and in the process of collection.

Business card loans are charged off in the same manner as consumer credit card loans. Other commercial loans and leases are generally charged off when all or a portion of the principal amount is determined to be uncollectible.

The entire balance of a consumer loan or commercial loan or lease is contractually delinquent if the minimum payment is not received by the specified due date on the customer's billing statement. Interest and fees continue to accrue on past due loans and leases until the date the loan is placed on nonaccrual status, if applicable. Accrued interest receivable is reversed when loans and leases are placed on nonaccrual status. Interest collections on nonaccruing loans and leases for which the ultimate collectability of principal is uncertain are applied as principal reductions; otherwise, such collections are credited to income when received. Loans and leases may be restored to accrual status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected.

Troubled Debt Restructurings

Consumer and commercial loans and leases whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties are classified as TDRs. Concessions could include a reduction in the interest rate to a rate that is below market on the loan, payment extensions, forgiveness of principal, forbearance or other actions designed to maximize collections. Loans that are carried at fair value and LHFS are not classified as TDRs.

Loans and leases whose contractual terms have been modified in a TDR and are current at the time of restructuring may remain on accrual status if there is demonstrated performance prior to the restructuring and payment in full under the restructured terms is expected. Otherwise, the loans are

placed on nonaccrual status and reported as nonperforming, except for fully-insured consumer real estate loans, until there is sustained repayment performance for a reasonable period, generally six months. If accruing TDRs cease to perform in accordance with their modified contractual terms, they are placed on nonaccrual status and reported as nonperforming TDRs.

Secured consumer loans that have been discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrower are classified as TDRs at the time of discharge. Such loans are placed on nonaccrual status and written down to the estimated collateral value less costs to sell no later than at the time of discharge. If these loans are contractually current, interest collections are generally recorded in interest income on a cash basis. Consumer real estate-secured loans for which a binding offer to restructure has been extended are also classified as TDRs. Credit card and other unsecured consumer loans that have been renegotiated in a TDR generally remain on accrual status until the loan is either paid in full or charged off, which occurs no later than the end of the month in which the loan becomes 180 days past due or, for loans that have been placed on a fixed payment plan, 120 days past due.

A loan that had previously been modified in a TDR and is subsequently refinanced under current underwriting standards at a market rate with no concessionary terms is accounted for as a new loan and is no longer reported as a TDR.

Loans Held-for-sale

Loans that the Corporation intends to sell in the foreseeable future, including residential mortgages, loan syndications, and to a lesser degree, commercial real estate, consumer finance and other loans, are reported as LHFS and are carried at the lower of aggregate cost or fair value. The Corporation accounts for certain LHFS, including residential mortgage LHFS, under the fair value option. Loan origination costs for LHFS carried at the lower of cost or fair value are capitalized as part of the carrying value of the loans and, upon the sale of a loan, are recognized as part of the gain or loss in noninterest income. LHFS that are on nonaccrual status and are reported as nonperforming, as defined in the policy herein, are reported separately from nonperforming loans and leases.

Premises and Equipment

Premises and equipment are carried at cost less accumulated depreciation and amortization. Depreciation and amortization are recognized using the straight-line method over the estimated useful lives of the assets. Estimated lives range up to 40 years for buildings, up to 12 years for furniture and equipment, and the shorter of lease term or estimated useful life for leasehold improvements.

Other Assets

For the Corporation's financial assets that are measured at amortized cost and are not included in debt securities or loans and leases on the Consolidated Balance Sheet, the Corporation evaluates these assets for ECL using various techniques. For assets that are subject to collateral maintenance provisions, including federal funds sold and securities borrowed or purchased under agreements to resell, where the collateral consists of daily margining of liquid and marketable assets where the margining is expected to be maintained into the foreseeable future, the expected losses are assumed to be zero. For all other assets, the Corporation performs qualitative analyses, including consideration of historical losses and current economic conditions, to estimate any ECL which are then included in a valuation account that is recorded as a contra-asset against the amortized cost basis of the financial asset.

Lessee Arrangements

Substantially all of the Corporation's lessee arrangements are operating leases. Under these arrangements, the Corporation records right-of-use assets and lease liabilities at lease commencement. Right-of-use assets are reported in other assets on the Consolidated Balance Sheet, and the related lease liabilities are reported in accrued expenses and other liabilities. All leases are recorded on the Consolidated Balance Sheet except leases with an initial term less than 12 months for which the Corporation made the short-term lease election. Lease expense is recognized on a straight-line basis over the lease term and is recorded in occupancy and equipment expense in the Consolidated Statement of Income.

The Corporation made an accounting policy election not to separate lease and non-lease components of a contract that is or contains a lease for its real estate and equipment leases. As such, lease payments represent payments on both lease and non-lease components. At lease commencement, lease liabilities are recognized based on the present value of the remaining lease payments and discounted using the Corporation's incremental borrowing rate. Right-of-use assets initially equal the lease liability, adjusted for any lease payments made prior to lease commencement and for any lease incentives.

Goodwill and Intangible Assets

Goodwill is the purchase premium after adjusting for the fair value of net assets acquired. Goodwill is not amortized but is reviewed for potential impairment on an annual basis, or when events or circumstances indicate a potential impairment, at the reporting unit level. A reporting unit is a business segment or one level below a business segment.

The Corporation assesses the fair value of each reporting unit against its carrying value, including goodwill, as measured by allocated equity. For purposes of goodwill impairment testing, the Corporation utilizes allocated equity as a proxy for the carrying value of its reporting units. Allocated equity in the reporting units is comprised of allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the reporting unit.

In performing its goodwill impairment testing, the Corporation first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Qualitative factors include, among other things, macroeconomic conditions, industry and market considerations, financial performance of the respective reporting unit and other relevant entity- and reporting-unit specific considerations.

If the Corporation concludes it is more likely than not that the fair value of a reporting unit is less than its carrying value, a quantitative assessment is performed. The Corporation has an unconditional option to bypass the qualitative assessment for any reporting unit in any period and proceed directly to performing the quantitative goodwill impairment test. The Corporation may resume performing the qualitative assessment in any subsequent period.

When performing the quantitative assessment, if the fair value of the reporting unit exceeds its carrying value, goodwill of the reporting unit would not be considered impaired. If the carrying value of the reporting unit exceeds its fair value, a goodwill impairment loss would be recognized for the amount by

which the reporting unit's allocated equity exceeds its fair value. An impairment loss recognized cannot exceed the amount of goodwill assigned to a reporting unit. An impairment loss establishes a new basis in the goodwill, and subsequent reversals of goodwill impairment losses are not permitted under applicable accounting guidance.

For intangible assets subject to amortization, an impairment loss is recognized if the carrying value of the intangible asset is not recoverable and exceeds fair value. The carrying value of the intangible asset is considered not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use of the asset. Intangible assets deemed to have indefinite useful lives are not subject to amortization. An impairment loss is recognized if the carrying value of the intangible asset with an indefinite life exceeds its fair value.

Variable Interest Entities

A VIE is an entity that lacks equity investors or whose equity investors do not have a controlling financial interest in the entity through their equity investments. The Corporation consolidates a VIE if it has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. On a quarterly basis, the Corporation reassesses its involvement with the VIE and evaluates the impact of changes in governing documents and its financial interests in the VIE. The consolidation status of the VIEs with which the Corporation is involved may change as a result of such reassessments.

The Corporation primarily uses VIEs for its securitization activities, in which the Corporation transfers whole loans or debt securities into a trust or other vehicle. When the Corporation is the servicer of whole loans held in a securitization trust, including non-agency residential mortgages, home equity loans, credit cards, and other loans, the Corporation has the power to direct the most significant activities of the trust. The Corporation generally does not have the power to direct the most significant activities of a residential mortgage agency trust except in certain circumstances in which the Corporation holds substantially all of the issued securities and has the unilateral right to liquidate the trust. The power to direct the most significant activities of a commercial mortgage securitization trust is typically held by the special servicer or by the party holding specific subordinate securities which embody certain controlling rights. The Corporation consolidates a whole-loan securitization trust if it has the power to direct the most significant activities and also holds securities issued by the trust or has other contractual arrangements, other than standard representations and warranties, that could potentially be significant to the trust.

The Corporation may also transfer trading account securities and AFS securities into municipal bond or resecuritization trusts. The Corporation consolidates a municipal bond or resecuritization trust if it has control over the ongoing activities of the trust such as the remarketing of the trust's liabilities or, if there are no ongoing activities, sole discretion over the design of the trust, including the identification of securities to be transferred in and the structure of securities to be issued, and also retains securities or has liquidity or other commitments that could potentially be significant to the trust. The Corporation does not consolidate a municipal bond or resecuritization trust if one or a limited number of third-party investors share responsibility for the design of the trust or have control over the significant activities of the trust through liquidation or other substantive rights.

Other VIEs used by the Corporation include collateralized debt obligations (CDOs), investment vehicles created on behalf of customers and other investment vehicles. The Corporation does not routinely serve as collateral manager for CDOs and, therefore, does not typically have the power to direct the activities that most significantly impact the economic performance of a CDO. However, following an event of default, if the Corporation is a majority holder of senior securities issued by a CDO and acquires the power to manage its assets, the Corporation consolidates the CDO.

The Corporation consolidates a customer or other investment vehicle if it has control over the initial design of the vehicle or manages the assets in the vehicle and also absorbs potentially significant gains or losses through an investment in the vehicle, derivative contracts or other arrangements. The Corporation does not consolidate an investment vehicle if a single investor controlled the initial design of the vehicle or manages the assets in the vehicles or if the Corporation does not have a variable interest that could potentially be significant to the vehicle.

Retained interests in securitized assets are initially recorded at fair value. In addition, the Corporation may invest in debt securities issued by unconsolidated VIEs. Fair values of these debt securities, which are classified as trading account assets, debt securities carried at fair value or HTM securities, are based primarily on quoted market prices in active or inactive markets. Generally, quoted market prices for retained residual interests are not available; therefore, the Corporation estimates fair values based on the present value of the associated expected future cash flows.

Fair Value

The Corporation measures the fair values of its assets and liabilities, where applicable, in accordance with accounting guidance that requires an entity to base fair value on exit price. Under this guidance, an entity is required to maximize the use of observable inputs and minimize the use of unobservable inputs in measuring fair value. Under applicable accounting standards, fair value measurements are categorized into one of three levels based on the inputs to the valuation technique with the highest priority given to unadjusted quoted prices in active markets and the lowest priority given to unobservable inputs. The Corporation categorizes its fair value measurements of financial instruments based on this three-level hierarchy.

Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities. Level 1 assets and liabilities include debt and equity securities and derivative contracts that are traded in an active exchange market, as well as certain U.S. Treasury securities that are highly liquid and are actively traded in OTC markets.

Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts where fair value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes U.S. government and

agency mortgage-backed (MBS) and asset-backed securities (ABS), corporate debt securities, derivative contracts, certain loans and LHFS.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the overall fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments for which the determination of fair value requires significant management judgment or estimation. The fair value for such assets and liabilities is generally determined using pricing models, discounted cash flow methodologies or similar techniques that incorporate the assumptions a market participant would use in pricing the asset or liability. This category generally includes retained residual interests in securitizations, consumer MSRs, certain ABS, highly structured, complex or long-dated derivative contracts, certain loans and LHFS, IRLCs and certain CDOs where independent pricing information cannot be obtained for a significant portion of the underlying assets.

Income Taxes

There are two components of income tax expense: current and deferred. Current income tax expense reflects taxes to be paid or refunded for the current period. Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. These gross deferred tax assets and liabilities represent decreases or increases in taxes expected to be paid in the future because of future reversals of temporary differences in the bases of assets and liabilities as measured by tax laws and their bases as reported in the financial statements. Deferred tax assets are also recognized for tax attributes such as net operating loss carryforwards and tax credit carryforwards. Valuation allowances are recorded to reduce deferred tax assets to the amounts management concludes are more likely than not to be realized.

Income tax benefits are recognized and measured based upon a two-step model: first, a tax position must be more likely than not to be sustained based solely on its technical merits in order to be recognized, and second, the benefit is measured as the largest dollar amount of that position that is more likely than not to be sustained upon settlement. The difference between the benefit recognized and the tax benefit claimed on a tax return is referred to as an unrecognized tax benefit. The Corporation records income tax-related interest and penalties, if applicable, within income tax expense.

Revenue Recognition

The following summarizes the Corporation's revenue recognition accounting policies for certain noninterest income activities.

Card Income

Card income includes annual, late and over-limit fees as well as interchange, cash advances and other miscellaneous items from credit and debit card transactions and from processing card transactions for merchants. Card income is presented net of direct costs. Interchange fees are recognized upon settlement of the credit and debit card payment transactions and are generally determined on a percentage basis for credit cards and fixed rates for debit cards based on the corresponding payment network's rates. Substantially all card fees are recognized at the transaction date, except for certain time-based fees such as annual fees, which are recognized over 12 months. Fees charged to cardholders and merchants that are estimated to be uncollectible are reserved in the allowance for loan and lease losses. Included in direct cost are rewards and credit card partner payments. Rewards paid to cardholders are related to points earned by the cardholder that can be redeemed for a broad range of rewards including cash, travel and gift cards. The points to be redeemed are estimated based on past redemption behavior, card product type, account transaction activity and other historical card performance. The liability is reduced as the points are redeemed. The Corporation also makes payments to credit card partners. The payments are based on revenue-sharing agreements that are generally driven by cardholder transactions and partner sales volumes. As part of the revenue-sharing agreements, the credit card partner provides the Corporation exclusive rights to market to the credit card partner's members or customers on behalf of the Corporation.

Service Charges

Service charges include deposit and lending-related fees. Deposit-related fees consist of fees earned on consumer and commercial deposit activities and are generally recognized when the transactions occur or as the service is performed. Consumer fees are earned on consumer deposit accounts for account maintenance and various transaction-based services, such as ATM transactions, wire transfer activities, check and money order processing and insufficient funds/overdraft transactions. Commercial deposit-related fees are from the Corporation's Global Transaction Services business and consist of commercial deposit and treasury management services, including account maintenance and other services, such as payroll, sweep account and other cash management services. Lending-related fees generally represent transactional fees earned from certain loan commitments, financial guarantees and SBLCs.

Investment and Brokerage Services

Investment and brokerage services consist of asset management and brokerage fees. Asset management fees are earned from the management of client assets under advisory agreements or the full discretion of the Corporation's financial advisors (collectively referred to as assets under management (AUM)). Asset management fees are earned as a percentage of the client's AUM and generally range from 50 basis points (bps) to 150 bps of the AUM. In cases where a third party is used to obtain a client's investment allocation, the fee remitted to the third party is recorded net and is not reflected in the transaction price, as the Corporation is an agent for those services.

Brokerage fees include income earned from transaction-based services that are performed as part of investment management services and are based on a fixed price per unit or as a percentage of the total transaction amount. Brokerage fees also include distribution fees and sales commissions that are primarily in the *Global Wealth & Investment Management (GWIM)* segment and are earned over time. In addition, primarily in the *Global Markets* segment, brokerage fees are earned when the Corporation fills customer orders to buy or sell various financial products or when it acknowledges, affirms, settles and clears transactions and/or submits trade information to the appropriate clearing broker. Certain customers pay brokerage, clearing and/or exchange fees imposed by relevant regulatory bodies or exchanges in order to execute or clear trades. These fees are recorded net and are not reflected in the transaction price, as the Corporation is an agent for those services.

Investment Banking Income

Investment banking income includes underwriting income and financial advisory services income. Underwriting consists of fees

earned for the placement of a customer's debt or equity securities. The revenue is generally earned based on a percentage of the fixed number of shares or principal placed. Once the number of shares or notes is determined and the service is completed, the underwriting fees are recognized. The Corporation incurs certain out-of-pocket expenses, such as legal costs, in performing these services. These expenses are recovered through the revenue the Corporation earns from the customer and are included in operating expenses. Syndication fees represent fees earned as the agent or lead lender responsible for structuring, arranging and administering a loan syndication.

Financial advisory services consist of fees earned for assisting clients with transactions related to mergers and acquisitions and financial restructurings. Revenue varies depending on the size of the transaction and scope of services performed and is generally contingent on successful completion of the transaction. Revenue is typically recognized once the transaction is completed and all services have been rendered. Additionally, the Corporation may earn a fixed fee in merger and acquisition transactions to provide a fairness opinion, with the fees recognized when the opinion is delivered to the client.

Other Revenue Measurement and Recognition Policies

The Corporation did not disclose the value of any open performance obligations at December 31, 2022, as its contracts with customers generally have a fixed term that is less than one year, an open term with a cancellation period that is less than one year, or provisions that allow the Corporation to recognize revenue at the amount it has the right to invoice.

Earnings Per Common Share

Earnings per common share (EPS) is computed by dividing net income allocated to common shareholders by the weighted-average common shares outstanding, excluding unvested common shares subject to repurchase or cancellation. Net income allocated to common shareholders is net income adjusted for preferred stock dividends including dividends declared, accretion of discounts on preferred stock including accelerated accretion when preferred stock is repaid early, and cumulative dividends related to the current dividend period that have not been declared as of period end, less income allocated to participating securities. Diluted EPS is computed by dividing income allocated to common shareholders plus dividends on dilutive convertible preferred stock and preferred stock that can be tendered to exercise warrants, by the weighted-average common shares outstanding plus amounts representing the dilutive effect of stock options outstanding, restricted stock, restricted stock units (RSUs), outstanding warrants and the dilution resulting from the conversion of convertible preferred stock, if applicable.

Foreign Currency Translation

Assets, liabilities and operations of foreign branches and subsidiaries are recorded based on the functional currency of each entity. When the functional currency of a foreign operation is the local currency, the assets, liabilities and operations are translated, for consolidation purposes, from the local currency to the U.S. dollar reporting currency at period-end rates for assets and liabilities and generally at average rates for results of operations. The resulting unrealized gains and losses are reported as a component of accumulated OCI, net-of-tax. When the foreign entity's functional currency is the U.S. dollar, the resulting remeasurement gains or losses on foreign currency-denominated assets or liabilities are included in earnings.

NOTE 2 Net Interest Income and Noninterest Income

The table below presents the Corporation's net interest income and noninterest income disaggregated by revenue source for 2022, 2021 and 2020. For more information, see *Note 1 – Summary of Significant Accounting Principles.* For a disaggregation of noninterest income by business segment and *All Other*, see *Note 23 – Business Segment Information*.

(Dollars in millions)	2022	2021	2020
Net interest income			
Interest income			
Loans and leases	**$ 37,919**	$ 29,282	$ 34,029
Debt securities	**17,127**	12,376	9,790
Federal funds sold and securities borrowed or purchased under agreements to resell [1]	**4,560**	(90)	903
Trading account assets	**5,521**	3,770	4,128
Other interest income	**7,438**	2,334	2,735
Total interest income	**72,565**	47,672	51,585
Interest expense			
Deposits	**4,718**	537	1,943
Short-term borrowings [1]	**6,978**	(358)	987
Trading account liabilities	**1,538**	1,128	974
Long-term debt	**6,869**	3,431	4,321
Total interest expense	**20,103**	4,738	8,225
Net interest income	**$ 52,462**	$ 42,934	$ 43,360
Noninterest income			
Fees and commissions			
Card income			
Interchange fees [2]	**$ 4,096**	$ 4,560	$ 3,954
Other card income	**1,987**	1,658	1,702
Total card income	**6,083**	6,218	5,656
Service charges			
Deposit-related fees	**5,190**	6,271	5,991
Lending-related fees	**1,215**	1,233	1,150
Total service charges	**6,405**	7,504	7,141
Investment and brokerage services			
Asset management fees	**12,152**	12,729	10,708
Brokerage fees	**3,749**	3,961	3,866
Total investment and brokerage services	**15,901**	16,690	14,574
Investment banking fees			
Underwriting income	**1,970**	5,077	4,698
Syndication fees	**1,070**	1,499	861
Financial advisory services	**1,783**	2,311	1,621
Total investment banking fees	**4,823**	8,887	7,180
Total fees and commissions	**33,212**	39,299	34,551
Market making and similar activities	**12,075**	8,691	8,355
Other income (loss)	**(2,799)**	(1,811)	(738)
Total noninterest income	**$ 42,488**	$ 46,179	$ 42,168

[1] For more information on negative interest, see *Note 1 – Summary of Significant Accounting Principles.*

[2] Gross interchange fees and merchant income were $12.9 billion, $11.5 billion and $9.2 billion for 2022, 2021, and 2020, respectively, and are presented net of $8.8 billion, $6.9 billion and $5.5 billion of expenses for rewards and partner payments as well as certain other card costs for the same periods.

NOTE 3 Derivatives

Derivative Balances

Derivatives are entered into on behalf of customers, for trading or to support risk management activities. Derivatives used in risk management activities include derivatives that may or may not be designated in qualifying hedge accounting relationships. Derivatives that are not designated in qualifying hedge accounting relationships are referred to as other risk management derivatives. For more information on the Corporation's derivatives and hedging activities, see *Note 1 – Summary of Significant Accounting Principles*. The following tables present derivative instruments included on the Consolidated Balance Sheet in derivative assets and liabilities at December 31, 2022 and 2021. Balances are presented on a gross basis, prior to the application of counterparty and cash collateral netting. Total derivative assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements and have been reduced by cash collateral received or paid.

		December 31, 2022					
		Gross Derivative Assets			Gross Derivative Liabilities		
(Dollars in billions)	Contract/ Notional [1]	Trading and Other Risk Management Derivatives	Qualifying Accounting Hedges	Total	Trading and Other Risk Management Derivatives	Qualifying Accounting Hedges	Total
Interest rate contracts							
Swaps	$ 18,285.9	$ 138.2	$ 20.7	$ 158.9	$ 120.3	$ 36.7	$ 157.0
Futures and forwards	2,796.3	8.6	—	8.6	7.8	—	7.8
Written options [2]	1,657.9	—	—	—	41.4	—	41.4
Purchased options [3]	1,594.7	42.4	—	42.4	—	—	—
Foreign exchange contracts							
Swaps	1,509.0	44.0	0.3	44.3	43.3	0.4	43.7
Spot, futures and forwards	4,159.3	59.9	0.1	60.0	62.1	0.6	62.7
Written options [2]	392.2	—	—	—	8.1	—	8.1
Purchased options [3]	362.6	8.3	—	8.3	—	—	—
Equity contracts							
Swaps	394.0	10.8	—	10.8	12.2	—	12.2
Futures and forwards	114.6	3.3	—	3.3	1.0	—	1.0
Written options [2]	746.8	—	—	—	45.0	—	45.0
Purchased options [3]	671.6	40.9	—	40.9	—	—	—
Commodity contracts							
Swaps	56.0	5.1	—	5.1	5.3	—	5.3
Futures and forwards	157.3	3.0	—	3.0	2.3	0.8	3.1
Written options [2]	59.5	—	—	—	3.3	—	3.3
Purchased options [3]	61.8	3.6	—	3.6	—	—	—
Credit derivatives [4]							
Purchased credit derivatives:							
Credit default swaps	319.9	2.8	—	2.8	1.6	—	1.6
Total return swaps/options	71.5	0.7	—	0.7	3.0	—	3.0
Written credit derivatives:							
Credit default swaps	295.2	1.2	—	1.2	2.4	—	2.4
Total return swaps/options	85.3	4.4	—	4.4	0.9	—	0.9
Gross derivative assets/liabilities		$ 377.2	$ 21.1	$ 398.3	$ 360.0	$ 38.5	$ 398.5
Less: Legally enforceable master netting agreements				(315.9)			(315.9)
Less: Cash collateral received/paid				(33.8)			(37.8)
Total derivative assets/liabilities				$ 48.6			$ 44.8

(1) Represents the total contract/notional amount of derivative assets and liabilities outstanding.
(2) Includes certain out-of-the-money purchased options that have a liability amount primarily due to the deferral of the option premiums to the end of the contract.
(3) Includes certain out-of-the-money written options that have an asset amount primarily due to the deferral of the option premiums to the end of the contract.
(4) The net derivative asset (liability) and notional amount of written credit derivatives for which the Corporation held purchased credit derivatives with identical underlying referenced names were $(1.2) billion and $276.9 billion at December 31, 2022.

(Dollars in billions)	Contract/ Notional [1]	December 31, 2021 Gross Derivative Assets: Trading and Other Risk Management Derivatives	Gross Derivative Assets: Qualifying Accounting Hedges	Gross Derivative Assets: Total	Gross Derivative Liabilities: Trading and Other Risk Management Derivatives	Gross Derivative Liabilities: Qualifying Accounting Hedges	Gross Derivative Liabilities: Total
Interest rate contracts							
Swaps	$ 18,068.1	$ 150.5	$ 8.9	$ 159.4	$ 156.4	$ 4.4	$ 160.8
Futures and forwards	2,243.2	1.1	—	1.1	1.0	—	1.0
Written options [2]	1,616.1	—	—	—	28.8	—	28.8
Purchased options [3]	1,673.6	33.1	—	33.1	—	—	—
Foreign exchange contracts							
Swaps	1,420.9	28.6	0.2	28.8	30.5	0.2	30.7
Spot, futures and forwards	4,087.2	37.1	0.3	37.4	37.7	0.2	37.9
Written options [2]	287.2	—	—	—	4.1	—	4.1
Purchased options [3]	267.6	4.1	—	4.1	—	—	—
Equity contracts							
Swaps	443.8	12.3	—	12.3	14.5	—	14.5
Futures and forwards	113.3	0.5	—	0.5	1.7	—	1.7
Written options [2]	737.7	—	—	—	58.5	—	58.5
Purchased options [3]	657.0	55.9	—	55.9	—	—	—
Commodity contracts							
Swaps	47.7	3.1	—	3.1	6.0	—	6.0
Futures and forwards	101.5	2.3	—	2.3	0.3	1.1	1.4
Written options [2]	44.4	—	—	—	2.6	—	2.6
Purchased options [3]	38.3	3.2	—	3.2	—	—	—
Credit derivatives [4]							
Purchased credit derivatives:							
Credit default swaps	297.0	1.9	—	1.9	4.3	—	4.3
Total return swaps/options	85.3	0.2	—	0.2	1.1	—	1.1
Written credit derivatives:							
Credit default swaps	279.8	4.2	—	4.2	1.6	—	1.6
Total return swaps/options	85.3	0.9	—	0.9	0.5	—	0.5
Gross derivative assets/liabilities		$ 339.0	$ 9.4	$ 348.4	$ 349.6	$ 5.9	$ 355.5
Less: Legally enforceable master netting agreements				(282.3)			(282.3)
Less: Cash collateral received/paid				(30.8)			(35.5)
Total derivative assets/liabilities				$ 35.3			$ 37.7

(1) Represents the total contract/notional amount of derivative assets and liabilities outstanding.
(2) Includes certain out-of-the-money purchased options that have a liability amount primarily due to the deferral of the option premiums to the end of the contract.
(3) Includes certain out-of-the-money written options that have an asset amount primarily due to the deferral of the option premiums to the end of the contract.
(4) The net derivative asset (liability) and notional amount of written credit derivatives for which the Corporation held purchased credit derivatives with identical underlying referenced names were $2.3 billion and $258.4 billion at December 31, 2021.

Offsetting of Derivatives

The Corporation enters into International Swaps and Derivatives Association, Inc. (ISDA) master netting agreements or similar agreements with substantially all of the Corporation's derivative counterparties. Where legally enforceable, these master netting agreements give the Corporation, in the event of default by the counterparty, the right to liquidate securities held as collateral and to offset receivables and payables with the same counterparty. For purposes of the Consolidated Balance Sheet, the Corporation offsets derivative assets and liabilities and cash collateral held with the same counterparty where it has such a legally enforceable master netting agreement.

The following table presents derivative instruments included in derivative assets and liabilities on the Consolidated Balance Sheet at December 31, 2022 and 2021 by primary risk (e.g., interest rate risk) and the platform, where applicable, on which these derivatives are transacted. Balances are presented on a gross basis, prior to the application of counterparty and cash collateral netting. Total gross derivative assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements, which include reducing the balance for counterparty netting and cash collateral received or paid.

For more information on offsetting of securities financing agreements, see *Note 10 – Securities Financing Agreements, Short-term Borrowings, Collateral and Restricted Cash*.

Offsetting of Derivatives [1]

(Dollars in billions)	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
	December 31, 2022		December 31, 2021	
Interest rate contracts				
Over-the-counter	**$ 138.4**	**$ 132.3**	$ 171.3	$ 166.3
Exchange-traded	**0.4**	**0.1**	0.2	—
Over-the-counter cleared	**71.4**	**71.1**	22.6	22.5
Foreign exchange contracts				
Over-the-counter	**109.7**	**110.6**	67.9	70.5
Over-the-counter cleared	**1.3**	**1.2**	1.1	1.1
Equity contracts				
Over-the-counter	**21.5**	**22.6**	29.2	32.9
Exchange-traded	**33.0**	**33.8**	38.3	38.4
Commodity contracts				
Over-the-counter	**8.3**	**9.3**	6.1	7.6
Exchange-traded	**2.4**	**1.9**	1.4	1.3
Over-the-counter cleared	**0.3**	**0.3**	0.1	0.1
Credit derivatives				
Over-the-counter	**8.9**	**7.5**	5.2	5.3
Over-the-counter cleared	**—**	**—**	1.8	1.8
Total gross derivative assets/liabilities, before netting				
Over-the-counter	**286.8**	**282.3**	279.7	282.6
Exchange-traded	**35.8**	**35.8**	39.9	39.7
Over-the-counter cleared	**73.0**	**72.6**	25.6	25.5
Less: Legally enforceable master netting agreements and cash collateral received/paid				
Over-the-counter	**(243.8)**	**(248.2)**	(250.3)	(254.6)
Exchange-traded	**(33.5)**	**(33.5)**	(37.8)	(37.8)
Over-the-counter cleared	**(72.4)**	**(72.0)**	(25.0)	(25.4)
Derivative assets/liabilities, after netting	**45.9**	**37.0**	32.1	30.0
Other gross derivative assets/liabilities [2]	**2.7**	**7.8**	3.2	7.7
Total derivative assets/liabilities	**48.6**	**44.8**	35.3	37.7
Less: Financial instruments collateral [3]	**(18.5)**	**(7.4)**	(11.8)	(10.6)
Total net derivative assets/liabilities	**$ 30.1**	**$ 37.4**	$ 23.5	$ 27.1

[1] Over-the-counter derivatives include bilateral transactions between the Corporation and a particular counterparty. Over-the-counter cleared derivatives include bilateral transactions between the Corporation and a counterparty where the transaction is cleared through a clearinghouse. Exchange-traded derivatives include listed options transacted on an exchange.
[2] Consists of derivatives entered into under master netting agreements where the enforceability of these agreements is uncertain under bankruptcy laws in some countries or industries.
[3] Amounts are limited to the derivative asset/liability balance and, accordingly, do not include excess collateral received/pledged. Financial instruments collateral includes securities collateral received or pledged and cash securities held and posted at third-party custodians that are not offset on the Consolidated Balance Sheet but shown as a reduction to derive net derivative assets and liabilities.

ALM and Risk Management Derivatives

The Corporation's ALM and risk management activities include the use of derivatives to mitigate risk to the Corporation including derivatives designated in qualifying hedge accounting relationships and derivatives used in other risk management activities. Interest rate, foreign exchange, equity, commodity and credit contracts are utilized in the Corporation's ALM and risk management activities.

The Corporation maintains an overall interest rate risk management strategy that incorporates the use of interest rate contracts, which are generally non-leveraged generic interest rate and basis swaps, options, futures and forwards, to minimize significant fluctuations in earnings caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity and volatility so that movements in interest rates do not significantly adversely affect earnings or capital. As a result of interest rate fluctuations, hedged fixed-rate assets and liabilities appreciate or depreciate in fair value. Gains or losses on the derivative instruments that are linked to the hedged fixed-rate assets and liabilities are expected to substantially offset this unrealized appreciation or depreciation.

Market risk, including interest rate risk, can be substantial in the mortgage business. Market risk in the mortgage business is the risk that values of mortgage assets or revenues will be adversely affected by changes in market conditions such as interest rate movements. To mitigate the interest rate risk in mortgage banking production income, the Corporation utilizes forward loan sale commitments and other derivative instruments, including purchased options, and certain debt securities. The Corporation also utilizes derivatives such as interest rate options, interest rate swaps, forward settlement contracts and eurodollar futures to hedge certain market risks of MSRs.

The Corporation uses foreign exchange contracts to manage the foreign exchange risk associated with certain foreign currency-denominated assets and liabilities, as well as the Corporation's investments in non-U.S. subsidiaries. Exposure to loss on these contracts will increase or decrease over their respective lives as currency exchange and interest rates fluctuate.

The Corporation purchases credit derivatives to manage credit risk related to certain funded and unfunded credit exposures. Credit derivatives include credit default swaps (CDS), total return swaps and swaptions. These derivatives are recorded on the Consolidated Balance Sheet at fair value with changes in fair value recorded in other income.

Derivatives Designated as Accounting Hedges

The Corporation uses various types of interest rate and foreign exchange derivative contracts to protect against changes in the fair value of its assets and liabilities due to fluctuations in interest rates and foreign exchange rates (fair value hedges). The Corporation also uses these types of contracts to protect against changes in the cash flows of its assets and liabilities,

and other forecasted transactions (cash flow hedges). The Corporation hedges its net investment in consolidated non-U.S. operations determined to have functional currencies other than the U.S. dollar using forward exchange contracts and cross-currency basis swaps, and by issuing foreign currency-denominated debt (net investment hedges).

Fair Value Hedges

The table below summarizes information related to fair value hedges for 2022, 2021 and 2020.

Gains and Losses on Derivatives Designated as Fair Value Hedges

	Derivative			Hedged Item		
(Dollars in millions)	**2022**	2021	2020	**2022**	2021	2020
Interest rate risk on long-term debt [1]	**$ (26,654)**	$ (7,018)	$ 7,091	**$ 26,825**	$ 6,838	$ (7,220)
Interest rate and foreign currency risk on long-term debt [2]	**(120)**	(90)	783	**119**	79	(783)
Interest rate risk on available-for-sale securities [3]	**21,991**	5,203	(44)	**(22,280)**	(5,167)	49
Price risk on commodity inventory [4]	**674**	—	—	**(674)**	—	—
Total	**$ (4,109)**	$ (1,905)	$ 7,830	**$ 3,990**	$ 1,750	$ (7,954)

(1) Amounts are recorded in interest expense in the Consolidated Statement of Income.
(2) For 2022, 2021 and 2020, the derivative amount includes gains (losses) of $(37) million, $(73) million and $701 million in interest expense, $(81) million, $0 and $73 million in market making and similar activities, and $(2) million, $(17) million and $9 million in accumulated OCI, respectively. Line item totals are in the Consolidated Statement of Income and on the Consolidated Balance Sheet.
(3) Amounts are recorded in interest income in the Consolidated Statement of Income.
(4) Amounts are recorded in market making and similar activities in the Consolidated Statement of Income.

The table below summarizes the carrying value of hedged assets and liabilities that are designated and qualifying in fair value hedging relationships along with the cumulative amount of fair value hedging adjustments included in the carrying value that have been recorded in the current hedging relationships. These fair value hedging adjustments are open basis adjustments that are not subject to amortization as long as the hedging relationship remains designated.

Designated Fair Value Hedged Assets and Liabilities

	December 31, 2022		December 31, 2021	
(Dollars in millions)	**Carrying Value**	**Cumulative Fair Value Adjustments [1]**	Carrying Value	Cumulative Fair Value Adjustments [1]
Long-term debt [2]	**$ 187,402**	**$ (21,372)**	$ 181,745	$ 3,987
Available-for-sale debt securities [2, 3, 4]	**167,518**	**(18,190)**	209,038	(2,294)
Trading account assets [5]	**16,119**	**146**	2,067	32

(1) Increase (decrease) to carrying value.
(2) At December 31, 2022 and 2021, the cumulative fair value adjustments remaining on long-term debt and available-for-sale debt securities from discontinued hedging relationships resulted in an increase of $137 million and $1.5 billion in the related liability and a decrease in the related asset of $4.9 billion and $1.0 billion, which are being amortized over the remaining contractual life of the de-designated hedged items.
(3) These amounts include the amortized cost of the prepayable financial assets used to designate hedging relationships in which the hedged item is the last layer expected to be remaining at the end of the hedging relationship (i.e. last-of-layer hedging relationship). At December 31, 2022 and 2021, the amortized cost of the closed portfolios used in these hedging relationships was $21.4 billion and $21.1 billion, of which $9.2 billion and $6.9 billion was designated in the last-of-layer hedging relationship. At December 31, 2022 and 2021, the cumulative adjustment associated with these hedging relationships was a decrease of $451 million and $172 million.
(4) Carrying value represents amortized cost.
(5) Represents hedging activities related to certain commodities inventory.

Cash Flow and Net Investment Hedges

The table below summarizes certain information related to cash flow hedges and net investment hedges for 2022, 2021 and 2020. Of the $11.9 billion after-tax net loss ($15.9 billion pretax) on derivatives in accumulated OCI at December 31, 2022, losses of $4.4 billion after-tax ($5.9 billion pretax) related to both open and terminated cash flow hedges are expected to be reclassified into earnings in the next 12 months. These net losses reclassified into earnings are expected to primarily decrease net interest income related to the respective hedged items. For open cash flow hedges, the maximum length of time over which forecasted transactions are hedged is approximately seven years. For terminated cash flow hedges, the time period over which the forecasted transactions will be recognized in interest income is approximately five years, with the aggregated amount beyond this time period being insignificant.

Gains and Losses on Derivatives Designated as Cash Flow and Net Investment Hedges

	Gains (Losses) Recognized in Accumulated OCI on Derivatives			Gains (Losses) in Income Reclassified from Accumulated OCI		
(Dollars in millions, amounts pretax)	**2022**	2021	2020	**2022**	2021	2020
Cash flow hedges						
Interest rate risk on variable-rate portfolios [1]	**$ (13,492)**	$ (2,686)	$ 763	**$ (338)**	$ 148	$ (7)
Price risk on forecasted MBS purchases [1]	**(129)**	(249)	241	**11**	26	9
Price risk on certain compensation plans [2]	**(88)**	93	85	**29**	55	12
Total	**$ (13,709)**	$ (2,842)	$ 1,089	**$ (298)**	$ 229	$ 14
Net investment hedges						
Foreign exchange risk [3]	**$ 1,710**	$ 1,451	$ (834)	**$ 3**	$ 23	$ 4

(1) Amounts reclassified from accumulated OCI are recorded in interest income in the Consolidated Statement of Income.
(2) Amounts reclassified from accumulated OCI are recorded in compensation and benefits expense in the Consolidated Statement of Income.
(3) Amounts reclassified from accumulated OCI are recorded in other income in the Consolidated Statement of Income. Amounts excluded from effectiveness testing and recognized in market making and similar activities were losses of $38 million, $123 million and $11 million in 2022, 2021 and 2020, respectively.

Other Risk Management Derivatives

Other risk management derivatives are used by the Corporation to reduce certain risk exposures by economically hedging various assets and liabilities. The table below presents gains (losses) on these derivatives for 2022, 2021 and 2020. These gains (losses) are largely offset by the income or expense recorded on the hedged item.

Gains and Losses on Other Risk Management Derivatives

(Dollars in millions)	2022	2021	2020
Interest rate risk on mortgage activities [1, 2]	**$ (326)**	$ (18)	$ 611
Credit risk on loans [2]	**(37)**	(25)	(68)
Interest rate and foreign currency risk on asset and liability management activities [3]	**4,713**	1,757	(2,971)
Price risk on certain compensation plans [4]	**(1,073)**	917	700

(1) Includes hedges of interest rate risk on MSRs and IRLCs to originate mortgage loans that will be held for sale.
(2) Gains (losses) on these derivatives are recorded in other income.
(3) Gains (losses) on these derivatives are recorded in market making and similar activities.
(4) Gains (losses) on these derivatives are recorded in compensation and benefits expense.

Transfers of Financial Assets with Risk Retained through Derivatives

The Corporation enters into certain transactions involving the transfer of financial assets that are accounted for as sales where substantially all of the economic exposure to the transferred financial assets is retained through derivatives (e.g., interest rate and/or credit), but the Corporation does not retain control over the assets transferred. At both December 31, 2022 and 2021, the Corporation had transferred $4.8 billion of non-U.S. government-guaranteed mortgage-backed securities to a third-party trust and retained economic exposure to the transferred assets through derivative contracts. In connection with these transfers, the Corporation received gross cash proceeds of $4.9 billion and $4.8 billion at the transfer dates. At December 31, 2022 and 2021, the fair value of the transferred securities was $4.7 billion and $5.0 billion.

Sales and Trading Revenue

The Corporation enters into trading derivatives to facilitate client transactions and to manage risk exposures arising from trading account assets and liabilities. It is the Corporation's policy to include these derivative instruments in its trading activities, which include derivatives and non-derivative cash instruments. The resulting risk from these derivatives is managed on a portfolio basis as part of the Corporation's *Global Markets* business segment. The related sales and trading revenue generated within *Global Markets* is recorded in various income statement line items, including market making and similar activities and net interest income as well as other revenue categories.

Sales and trading revenue includes changes in the fair value and realized gains and losses on the sales of trading and other assets, net interest income, and fees primarily from commissions on equity securities. Revenue is generated by the difference in the client price for an instrument and the price at which the trading desk can execute the trade in the dealer market. For equity securities, commissions related to purchases and sales are recorded in the "Other" column in the Sales and Trading Revenue table. Changes in the fair value of these securities are included in market making and similar activities. For debt securities, revenue, with the exception of interest associated with the debt securities, is typically included in market making and similar activities. Unlike commissions for equity securities, the initial revenue related to broker-dealer services for debt securities is typically included in the pricing of the instrument rather than being charged through separate fee arrangements. Therefore, this revenue is recorded in market making and similar activities as part of the initial mark to fair value. For derivatives, the majority of revenue is included in market making and similar activities. In transactions where the Corporation acts as agent, which include exchange-traded futures and options, fees are recorded in other income.

The table below, which includes both derivatives and non-derivative cash instruments, identifies the amounts in the respective income statement line items attributable to the Corporation's sales and trading revenue in *Global Markets*, categorized by primary risk, for 2022, 2021 and 2020. This table includes debit valuation adjustment (DVA) and funding valuation adjustment (FVA) gains (losses). *Global Markets* results in *Note 23 – Business Segment Information* are presented on a fully taxable-equivalent (FTE) basis. The table below is not presented on an FTE basis.

Sales and Trading Revenue

(Dollars in millions)	Market making and similar activities	Net Interest Income	Other [1]	Total
		2022		
Interest rate risk	**$ 1,919**	**$ 1,619**	**$ 392**	**$ 3,930**
Foreign exchange risk	**1,981**	**46**	**(44)**	**1,983**
Equity risk	**6,077**	**(1,288)**	**1,757**	**6,546**
Credit risk	**592**	**2,228**	**177**	**2,997**
Other risk [2]	**835**	**(171)**	**15**	**679**
Total sales and trading revenue	**$ 11,404**	**$ 2,434**	**$ 2,297**	**$ 16,135**
		2021		
Interest rate risk	$ 523	$ 1,794	$ 217	$ 2,534
Foreign exchange risk	1,505	(80)	14	1,439
Equity risk	4,581	(5)	1,834	6,410
Credit risk	1,390	1,684	556	3,630
Other risk [2]	759	(128)	124	755
Total sales and trading revenue	$ 8,758	$ 3,265	$ 2,745	$ 14,768
		2020		
Interest rate risk	$ 2,236	$ 2,279	$ 229	$ 4,744
Foreign exchange risk	1,486	(19)	2	1,469
Equity risk	3,656	(77)	1,801	5,380
Credit risk	783	1,758	331	2,872
Other risk [2]	308	4	44	356
Total sales and trading revenue	$ 8,469	$ 3,945	$ 2,407	$ 14,821

(1) Represents amounts in investment and brokerage services and other income that are recorded in *Global Markets* and included in the definition of sales and trading revenue. Includes investment and brokerage services revenue of $2.0 billion, $1.9 billion and $1.9 billion in 2022, 2021 and 2020, respectively.
(2) Includes commodity risk.

Credit Derivatives

The Corporation enters into credit derivatives primarily to facilitate client transactions and to manage credit risk exposures. Credit derivatives derive value based on an underlying third-party referenced obligation or a portfolio of referenced obligations and generally require the Corporation, as the seller of credit protection, to make payments to a buyer upon the occurrence of a predefined credit event. Such credit events generally include bankruptcy of the referenced credit entity and failure to pay under the obligation, as well as acceleration of indebtedness and payment repudiation or moratorium. For credit derivatives based on a portfolio of referenced credits or credit indices, the Corporation may not be required to make payment until a specified amount of loss has

occurred and/or may only be required to make payment up to a specified amount.

Credit derivatives are classified as investment and non-investment grade based on the credit quality of the underlying referenced obligation. The Corporation considers ratings of BBB- or higher as investment grade. Non-investment grade includes non-rated credit derivative instruments. The Corporation discloses internal categorizations of investment grade and non-investment grade consistent with how risk is managed for these instruments.

Credit derivative instruments where the Corporation is the seller of credit protection and their expiration at December 31, 2022 and 2021 are summarized in the table below.

Credit Derivative Instruments

	Less than One Year	One to Three Years	Three to Five Years	Over Five Years	Total
			December 31, 2022		
(Dollars in millions)			Carrying Value		
Credit default swaps:					
Investment grade	$ 2	$ 25	$ 133	$ 34	$ 194
Non-investment grade	120	516	870	697	2,203
Total	122	541	1,003	731	2,397
Total return swaps/options:					
Investment grade	55	336	—	—	391
Non-investment grade	332	9	132	10	483
Total	387	345	132	10	874
Total credit derivatives	$ 509	$ 886	$ 1,135	$ 741	$ 3,271
Credit-related notes:					
Investment grade	$ —	$ —	$ 19	$ 1,017	$ 1,036
Non-investment grade	—	7	6	1,035	1,048
Total credit-related notes	$ —	$ 7	$ 25	$ 2,052	$ 2,084
			Maximum Payout/Notional		
Credit default swaps:					
Investment grade	$ 34,670	$ 66,170	$ 93,237	$ 18,677	$ 212,754
Non-investment grade	15,229	29,629	30,891	6,662	82,411
Total	49,899	95,799	124,128	25,339	295,165
Total return swaps/options:					
Investment grade	38,722	10,407	—	—	49,129
Non-investment grade	32,764	500	2,054	897	36,215
Total	71,486	10,907	2,054	897	85,344
Total credit derivatives	$ 121,385	$ 106,706	$ 126,182	$ 26,236	$ 380,509
			December 31, 2021		
			Carrying Value		
Credit default swaps:					
Investment grade	$ —	$ 5	$ 79	$ 49	$ 133
Non-investment grade	34	250	453	769	1,506
Total	34	255	532	818	1,639
Total return swaps/options:					
Investment grade	35	388	—	—	423
Non-investment grade	105	—	16	—	121
Total	140	388	16	—	544
Total credit derivatives	$ 174	$ 643	$ 548	$ 818	$ 2,183
Credit-related notes:					
Investment grade	$ —	$ —	$ 36	$ 412	$ 448
Non-investment grade	5	—	9	1,334	1,348
Total credit-related notes	$ 5	$ —	$ 45	$ 1,746	$ 1,796
			Maximum Payout/Notional		
Credit default swaps:					
Investment grade	$ 34,503	$ 66,334	$ 73,444	$ 17,844	$ 192,125
Non-investment grade	16,119	29,233	34,356	7,961	87,669
Total	50,622	95,567	107,800	25,805	279,794
Total return swaps/options:					
Investment grade	49,626	11,494	78	—	61,198
Non-investment grade	22,621	717	642	73	24,053
Total	72,247	12,211	720	73	85,251
Total credit derivatives	$ 122,869	$ 107,778	$ 108,520	$ 25,878	$ 365,045

The notional amount represents the maximum amount payable by the Corporation for most credit derivatives. However, the Corporation does not monitor its exposure to credit derivatives based solely on the notional amount because this measure does not take into consideration the probability of occurrence. As such, the notional amount is not a reliable indicator of the Corporation's exposure to these contracts. Instead, a risk framework is used to define risk tolerances and establish limits so that certain credit risk-related losses occur within acceptable, predefined limits.

Credit-related notes in the preceding table include investments in securities issued by CDO, collateralized loan

obligation (CLO) and credit-linked note vehicles. These instruments are primarily classified as trading securities. The carrying value of these instruments equals the Corporation's maximum exposure to loss. The Corporation is not obligated to make any payments to the entities under the terms of the securities owned.

Credit-related Contingent Features and Collateral

The Corporation executes the majority of its derivative contracts in the OTC market with large, international financial institutions, including broker-dealers and, to a lesser degree, with a variety of non-financial companies. A significant majority of the derivative transactions are executed on a daily margin basis. Therefore, events such as a credit rating downgrade (depending on the ultimate rating level) or a breach of credit covenants would typically require an increase in the amount of collateral required of the counterparty, where applicable, and/or allow the Corporation to take additional protective measures such as early termination of all trades. Further, as previously discussed on page 105, the Corporation enters into legally enforceable master netting agreements that reduce risk by permitting closeout and netting of transactions with the same counterparty upon the occurrence of certain events.

Certain of the Corporation's derivative contracts contain credit risk-related contingent features, primarily in the form of ISDA master netting agreements and credit support documentation that enhance the creditworthiness of these instruments compared to other obligations of the respective counterparty with whom the Corporation has transacted. These contingent features may be for the benefit of the Corporation as well as its counterparties with respect to changes in the Corporation's creditworthiness and the mark-to-market exposure under the derivative transactions. At December 31, 2022 and 2021, the Corporation held cash and securities collateral of $101.3 billion and $91.4 billion and posted cash and securities collateral of $81.2 billion and $79.3 billion in the normal course of business under derivative agreements, excluding cross-product margining agreements where clients are permitted to margin on a net basis for both derivative and secured financing arrangements.

In connection with certain OTC derivative contracts and other trading agreements, the Corporation can be required to provide additional collateral or to terminate transactions with certain counterparties in the event of a downgrade of the senior debt ratings of the Corporation or certain subsidiaries. The amount of additional collateral required depends on the contract and is usually a fixed incremental amount and/or the market value of the exposure.

At December 31, 2022, the amount of collateral, calculated based on the terms of the contracts, that the Corporation and certain subsidiaries could be required to post to counterparties but had not yet posted to counterparties was $3.2 billion, including $1.6 billion for Bank of America, National Association (BANA).

Some counterparties are currently able to unilaterally terminate certain contracts, or the Corporation or certain subsidiaries may be required to take other action such as find a suitable replacement or obtain a guarantee. At December 31, 2022 and 2021, the liability recorded for these derivative contracts was not significant.

The following table presents the amount of additional collateral that would have been contractually required by derivative contracts and other trading agreements at December 31, 2022 if the rating agencies had downgraded their long-term senior debt ratings for the Corporation or certain subsidiaries by one incremental notch and by an additional second incremental notch. The table also presents derivative liabilities that would be subject to unilateral termination by counterparties upon downgrade of the Corporation's or certain subsidiaries' long-term senior debt ratings.

Additional Collateral Required to be Posted and Derivative Liabilities Subject to Unilateral Termination Upon Downgrade at December 31, 2022

(Dollars in millions)	One Incremental Notch	Second Incremental Notch
Additional collateral required to be posted upon downgrade		
Bank of America Corporation	$ 230	$ 913
Bank of America, N.A. and subsidiaries [1]	66	668
Derivative liabilities subject to unilateral termination upon downgrade		
Derivative liabilities	$ 92	$ 1,073
Collateral posted	77	300

[1] Included in Bank of America Corporation collateral requirements in this table.

Valuation Adjustments on Derivatives

The Corporation records credit risk valuation adjustments on derivatives in order to properly reflect the credit quality of the counterparties and its own credit quality. The Corporation calculates valuation adjustments on derivatives based on a modeled expected exposure that incorporates current market risk factors. The exposure also takes into consideration credit mitigants such as enforceable master netting agreements and collateral. CDS spread data is used to estimate the default probabilities and severities that are applied to the exposures. Where no observable credit default data is available for counterparties, the Corporation uses proxies and other market data to estimate default probabilities and severity.

The table below presents credit valuation adjustment (CVA), DVA and FVA gains (losses) on derivatives (excluding the effect of any related hedge activities), which are recorded in market making and similar activities, for 2022, 2021 and 2020. CVA gains reduce the cumulative CVA thereby increasing the derivative assets balance. DVA gains increase the cumulative DVA thereby decreasing the derivative liabilities balance. CVA and DVA losses have the opposite impact. FVA gains related to derivative assets reduce the cumulative FVA thereby increasing the derivative assets balance. FVA gains related to derivative liabilities increase the cumulative FVA thereby decreasing the derivative liabilities balance. FVA losses have the opposite impact.

Valuation Adjustments Gains (Losses) on Derivatives [1]

(Dollars in millions)	2022	2021	2020
Derivative assets (CVA)	**$ (80)**	$ 208	$ (118)
Derivative assets/liabilities (FVA)	**125**	(2)	(24)
Derivative liabilities (DVA)	**194**	3	24

[1] At December 31, 2022, 2021 and 2020, cumulative CVA reduced the derivative assets balance by $518 million, $438 million and $646 million, cumulative FVA reduced the net derivative balance by $54 million, $179 million and $177 million, and cumulative DVA reduced the derivative liabilities balance by $506 million, $312 million and $309 million, respectively.

NOTE 4 Securities

The table below presents the amortized cost, gross unrealized gains and losses, and fair value of AFS debt securities, other debt securities carried at fair value and HTM debt securities at December 31, 2022 and 2021.

Debt Securities

(Dollars in millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	December 31, 2022				December 31, 2021			
Available-for-sale debt securities								
Mortgage-backed securities:								
Agency	**$ 25,204**	**$ 5**	**$ (1,767)**	**$ 23,442**	$ 45,268	$ 1,257	$ (186)	$ 46,339
Agency-collateralized mortgage obligations	**2,452**	**—**	**(231)**	**2,221**	3,331	74	(25)	3,380
Commercial	**6,894**	**28**	**(515)**	**6,407**	19,036	647	(79)	19,604
Non-agency residential [1]	**461**	**15**	**(90)**	**386**	591	25	(33)	583
Total mortgage-backed securities	**35,011**	**48**	**(2,603)**	**32,456**	68,226	2,003	(323)	69,906
U.S. Treasury and government agencies	**160,773**	**18**	**(1,769)**	**159,022**	197,853	1,610	(318)	199,145
Non-U.S. securities	**13,455**	**4**	**(52)**	**13,407**	11,933	—	—	11,933
Other taxable securities	**4,728**	**1**	**(84)**	**4,645**	2,725	39	(3)	2,761
Tax-exempt securities	**11,518**	**19**	**(279)**	**11,258**	15,155	317	(39)	15,433
Total available-for-sale debt securities	**225,485**	**90**	**(4,787)**	**220,788**	295,892	3,969	(683)	299,178
Other debt securities carried at fair value [2]	**8,986**	**376**	**(156)**	**9,206**	8,873	105	(83)	8,895
Total debt securities carried at fair value	**234,471**	**466**	**(4,943)**	**229,994**	304,765	4,074	(766)	308,073
Held-to-maturity debt securities								
Agency mortgage-backed securities	**503,233**	**—**	**(87,319)**	**415,914**	553,721	3,855	(10,366)	547,210
U.S. Treasury and government agencies	**121,597**	**—**	**(20,259)**	**101,338**	111,859	254	(2,395)	109,718
Other taxable securities	**8,033**	**—**	**(1,018)**	**7,015**	9,011	147	(196)	8,962
Total held-to-maturity debt securities	**632,863**	**—**	**(108,596)**	**524,267**	674,591	4,256	(12,957)	665,890
Total debt securities [3,4]	**$ 867,334**	**$ 466**	**$ (113,539)**	**$ 754,261**	$ 979,356	$ 8,330	$ (13,723)	$ 973,963

(1) At December 31, 2022 and 2021, the underlying collateral type included approximately 17 percent and 21 percent prime and 83 percent and 79 percent subprime.
(2) Primarily includes non-U.S. securities used to satisfy certain international regulatory requirements. Any changes in value are reported in market making and similar activities. For detail on the components, see *Note 20 – Fair Value Measurements*.
(3) Includes securities pledged as collateral of $104.5 billion and $111.9 billion at December 31, 2022 and 2021.
(4) The Corporation held debt securities from FNMA and FHLMC that each exceeded 10 percent of shareholders' equity, with an amortized cost of $290.5 billion and $176.7 billion, and a fair value of $239.6 billion and $144.6 billion at December 31, 2022, and an amortized cost of $345.3 billion and $205.3 billion, and a fair value of $342.5 billion and $202.4 billion at December 31, 2021.

At December 31, 2022, the accumulated net unrealized loss on AFS debt securities, excluding the amount related to debt securities previously transferred to held to maturity, included in accumulated OCI was $3.5 billion, net of the related income tax benefit of $1.2 billion. At December 31, 2022 and 2021, nonperforming AFS debt securities held by the Corporation were not significant.

At December 31, 2022 and 2021, the Corporation had $191.1 billion and $268.5 billion in AFS debt securities, which were primarily U.S. agency and U.S. Treasury securities that have a zero credit loss assumption. For more information on the zero credit loss assumption, see *Note 1 – Summary of Significant Accounting Principles*. For the remaining $29.7 billion and $30.7 billion in AFS debt securities at December 31, 2022 and 2021, the amount of ECL was not significant. At December 31, 2022 and 2021, the Corporation had $524.3 billion and $665.9 billion in HTM debt securities, which were substantially all U.S agency and U.S. Treasury securities that have a zero credit loss assumption.

At December 31, 2022 and 2021, the Corporation held equity securities at an aggregate fair value of $581 million and $513 million and other equity securities, as valued under the measurement alternative, at a carrying value of $340 million and $266 million, both of which are included in other assets. At December 31, 2022 and 2021, the Corporation also held money market investments at a fair value of $868 million and $707 million, which are included in time deposits placed and other short-term investments.

The gross realized gains and losses on sales of AFS debt securities for 2022, 2021 and 2020 are presented in the table below.

Gains and Losses on Sales of AFS Debt Securities

(Dollars in millions)	2022	2021	2020
Gross gains	**$ 1,251**	$ 49	$ 423
Gross losses	**(1,219)**	(27)	(12)
Net gains on sales of AFS debt securities	**$ 32**	$ 22	$ 411
Income tax expense attributable to realized net gains on sales of AFS debt securities	**$ 8**	$ 5	$ 103

The table below presents the fair value and the associated gross unrealized losses on AFS debt securities and whether these securities have had gross unrealized losses for less than 12 months or for 12 months or longer at December 31, 2022 and 2021.

Total AFS Debt Securities in a Continuous Unrealized Loss Position

	Less than Twelve Months		Twelve Months or Longer		Total	
(Dollars in millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	December 31, 2022					
Continuously unrealized loss-positioned AFS debt securities						
Mortgage-backed securities:						
Agency	**$ 18,759**	**$ (1,118)**	**$ 4,437**	**$ (649)**	**$ 23,196**	**$ (1,767)**
Agency-collateralized mortgage obligations	**1,165**	**(96)**	**1,022**	**(135)**	**2,187**	**(231)**
Commercial	**3,273**	**(150)**	**2,258**	**(365)**	**5,531**	**(515)**
Non-agency residential	**264**	**(65)**	**97**	**(25)**	**361**	**(90)**
Total mortgage-backed securities	**23,461**	**(1,429)**	**7,814**	**(1,174)**	**31,275**	**(2,603)**
U.S. Treasury and government agencies	**36,730**	**(308)**	**118,636**	**(1,461)**	**155,366**	**(1,769)**
Non-U.S. securities	**9,399**	**(34)**	**756**	**(18)**	**10,155**	**(52)**
Other taxable securities	**2,036**	**(16)**	**1,580**	**(68)**	**3,616**	**(84)**
Tax-exempt securities	**607**	**(28)**	**2,849**	**(251)**	**3,456**	**(279)**
Total AFS debt securities in a continuous unrealized loss position	**$ 72,233**	**$ (1,815)**	**$ 131,635**	**$ (2,972)**	**$ 203,868**	**$ (4,787)**
	December 31, 2021					
Continuously unrealized loss-positioned AFS debt securities						
Mortgage-backed securities:						
Agency	$ 11,733	$ (166)	$ 815	$ (20)	$ 12,548	$ (186)
Agency-collateralized mortgage obligations	1,427	(22)	122	(3)	1,549	(25)
Commercial	3,451	(41)	776	(38)	4,227	(79)
Non-agency residential	241	(13)	174	(20)	415	(33)
Total mortgage-backed securities	16,852	(242)	1,887	(81)	18,739	(323)
U.S. Treasury and government agencies	103,307	(272)	4,850	(46)	108,157	(318)
Other taxable securities	—	—	82	(3)	82	(3)
Tax-exempt securities	502	(16)	109	(23)	611	(39)
Total AFS debt securities in a continuous unrealized loss position	$ 120,661	$ (530)	$ 6,928	$ (153)	$ 127,589	$ (683)

The remaining contractual maturity distribution and yields of the Corporation's debt securities carried at fair value and HTM debt securities at December 31, 2022 are summarized in the table below. Actual duration and yields may differ as prepayments on the loans underlying the MBS or other ABS are passed through to the Corporation.

Maturities of Debt Securities Carried at Fair Value and Held-to-maturity Debt Securities

	Due in One Year or Less		Due after One Year through Five Years		Due after Five Years through Ten Years		Due after Ten Years		Total	
(Dollars in millions)	Amount	Yield [1]	Amount	Yield [1]	Amount	Yield [1]	Amount	Yield [1]	Amount	Yield [1]
Amortized cost of debt securities carried at fair value										
Mortgage-backed securities:										
Agency	$ —	— %	$ 3	5.67 %	$ 56	4.39 %	$ 25,145	3.37 %	$ 25,204	3.37 %
Agency-collateralized mortgage obligations	—	—	10	2.60	—	—	2,442	2.89	2,452	2.89
Commercial	22	2.09	670	3.07	4,591	2.03	1,624	2.31	6,907	2.20
Non-agency residential	—	—	—	—	—	—	825	9.54	825	9.54
Total mortgage-backed securities	22	2.09	683	3.08	4,647	2.06	30,036	3.44	35,388	3.25
U.S. Treasury and government agencies	3,306	1.59	79,618	1.68	78,378	1.64	32	3.38	161,334	1.66
Non-U.S. securities	17,499	2.41	3,002	4.58	723	3.93	279	6.87	21,503	2.82
Other taxable securities	2,034	4.77	2,102	4.85	455	3.46	137	3.35	4,728	4.64
Tax-exempt securities	890	3.36	4,765	3.55	2,022	3.73	3,841	3.88	11,518	3.68
Total amortized cost of debt securities carried at fair value	**$ 23,751**	**2.53**	**$ 90,170**	**1.96**	**$ 86,225**	**1.74**	**$ 34,325**	**3.52**	**$ 234,471**	**2.16**
Amortized cost of HTM debt securities										
Agency mortgage-backed securities	$ —	— %	$ —	— %	$ 14	2.64 %	$503,219	2.13 %	$503,233	2.13 %
U.S. Treasury and government agencies	—	—	4,544	1.80	117,053	1.37	—	—	121,597	1.39
Other taxable securities	38	9.06	1,251	2.23	313	3.00	6,431	2.45	8,033	2.47
Total amortized cost of HTM debt securities	**$ 38**	**9.06**	**$ 5,795**	**1.89**	**$ 117,380**	**1.37**	**$ 509,650**	**2.13**	**$ 632,863**	**1.99**
Debt securities carried at fair value										
Mortgage-backed securities:										
Agency	$ —		$ 3		$ 56		$ 23,383		$ 23,442	
Agency-collateralized mortgage obligations	—		10		—		2,211		2,221	
Commercial	22		650		4,342		1,404		6,418	
Non-agency residential	—		2		—		751		753	
Total mortgage-backed securities	22		665		4,398		27,749		32,834	
U.S. Treasury and government agencies	3,312		79,013		77,228		30		159,583	
Non-U.S. securities	17,709		2,960		723		279		21,671	
Other taxable securities	2,028		2,085		413		122		4,648	
Tax-exempt securities	887		4,729		1,997		3,645		11,258	
Total debt securities carried at fair value	**$ 23,958**		**$ 89,452**		**$ 84,759**		**$ 31,825**		**$ 229,994**	
Fair value of HTM debt securities										
Agency mortgage-backed securities	$ —		$ —		$ 13		$415,901		$415,914	
U.S. Treasury and government agencies	—		4,164		97,174		—		101,338	
Other taxable securities	38		1,170		295		5,512		7,015	
Total fair value of HTM debt securities	**$ 38**		**$ 5,334**		**$ 97,482**		**$ 421,413**		**$ 524,267**	

[1] The weighted-average yield is computed based on a constant effective interest rate over the contractual life of each security. The average yield considers the contractual coupon and the amortization of premiums and accretion of discounts, excluding the effect of related hedging derivatives.

NOTE 5 Outstanding Loans and Leases and Allowance for Credit Losses

The following tables present total outstanding loans and leases and an aging analysis for the Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments, by class of financing receivables, at December 31, 2022 and 2021.

(Dollars in millions)	30-59 Days Past Due [1]	60-89 Days Past Due [1]	90 Days or More Past Due [1]	Total Past Due 30 Days or More	Total Current or Less Than 30 Days Past Due [1]	Loans Accounted for Under the Fair Value Option	Total Outstandings
	December 31, 2022						
Consumer real estate							
Residential mortgage	$ 1,077	$ 245	$ 945	$ 2,267	$ 227,403		$ 229,670
Home equity	88	32	211	331	26,232		26,563
Credit card and other consumer							
Credit card	466	322	717	1,505	91,916		93,421
Direct/Indirect consumer [2]	204	59	45	308	105,928		106,236
Other consumer	—	—	—	—	156		156
Total consumer	1,835	658	1,918	4,411	451,635		456,046
Consumer loans accounted for under the fair value option [3]						$ 339	339
Total consumer loans and leases	1,835	658	1,918	4,411	451,635	339	456,385
Commercial							
U.S. commercial	827	288	330	1,445	357,036		358,481
Non-U.S. commercial	317	59	144	520	123,959		124,479
Commercial real estate [4]	409	81	77	567	69,199		69,766
Commercial lease financing	49	9	11	69	13,575		13,644
U.S. small business commercial [5]	107	63	356	526	17,034		17,560
Total commercial	1,709	500	918	3,127	580,803		583,930
Commercial loans accounted for under the fair value option [3]						5,432	5,432
Total commercial loans and leases	1,709	500	918	3,127	580,803	5,432	589,362
Total loans and leases [6]	$ 3,544	$ 1,158	$ 2,836	$ 7,538	$1,032,438	$ 5,771	$1,045,747
Percentage of outstandings	0.34 %	0.11 %	0.27 %	0.72 %	98.73 %	0.55 %	100.00 %

[1] Consumer real estate loans 30-59 days past due includes fully-insured loans of $184 million and nonperforming loans of $155 million. Consumer real estate loans 60-89 days past due includes fully-insured loans of $75 million and nonperforming loans of $88 million. Consumer real estate loans 90 days or more past due includes fully-insured loans of $368 million and nonperforming loans of $788 million. Consumer real estate loans current or less than 30 days past due includes $1.6 billion, and direct/indirect consumer includes $27 million of nonperforming loans.

[2] Total outstandings primarily includes auto and specialty lending loans and leases of $51.8 billion, U.S. securities-based lending loans of $50.4 billion and non-U.S. consumer loans of $3.0 billion.

[3] Consumer loans accounted for under the fair value option includes residential mortgage loans of $71 million and home equity loans of $268 million. Commercial loans accounted for under the fair value option includes U.S. commercial loans of $2.9 billion and non-U.S. commercial loans of $2.5 billion. For more information, see *Note 20 – Fair Value Measurements* and *Note 21 – Fair Value Option*.

[4] Total outstandings includes U.S. commercial real estate loans of $64.9 billion and non-U.S. commercial real estate loans of $4.8 billion.

[5] Includes Paycheck Protection Program loans.

[6] Total outstandings includes loans and leases pledged as collateral of $18.5 billion. The Corporation also pledged $163.6 billion of loans with no related outstanding borrowings to secure potential borrowing capacity with the Federal Reserve Bank and Federal Home Loan Bank.

(Dollars in millions)	30-59 Days Past Due [1]	60-89 Days Past Due [1]	90 Days or More Past Due [1]	Total Past Due 30 Days or More	Total Current or Less Than 30 Days Past Due [1]	Loans Accounted for Under the Fair Value Option	Total Outstandings
	December 31, 2021						
Consumer real estate							
Residential mortgage	$ 1,005	$ 297	$ 1,571	$ 2,873	$ 219,090		$ 221,963
Home equity	123	69	369	561	27,374		27,935
Credit card and other consumer							
Credit card	298	212	487	997	80,441		81,438
Direct/Indirect consumer [2]	147	52	18	217	103,343		103,560
Other consumer	—	—	—	—	190		190
Total consumer	1,573	630	2,445	4,648	430,438		435,086
Consumer loans accounted for under the fair value option [3]						$ 618	618
Total consumer loans and leases	1,573	630	2,445	4,648	430,438	618	435,704
Commercial							
U.S. commercial	815	308	396	1,519	324,417		325,936
Non-U.S. commercial	148	20	83	251	113,015		113,266
Commercial real estate [4]	115	34	285	434	62,575		63,009
Commercial lease financing	104	28	13	145	14,680		14,825
U.S. small business commercial [5]	129	259	89	477	18,706		19,183
Total commercial	1,311	649	866	2,826	533,393		536,219
Commercial loans accounted for under the fair value option [3]						7,201	7,201
Total commercial loans and leases	1,311	649	866	2,826	533,393	7,201	543,420
Total loans and leases [6]	$ 2,884	$ 1,279	$ 3,311	$ 7,474	$ 963,831	$ 7,819	$ 979,124
Percentage of outstandings	0.29 %	0.13 %	0.34 %	0.76 %	98.44 %	0.80 %	100.00 %

[1] Consumer real estate loans 30-59 days past due includes fully-insured loans of $164 million and nonperforming loans of $118 million. Consumer real estate loans 60-89 days past due includes fully-insured loans of $89 million and nonperforming loans of $100 million. Consumer real estate loans 90 days or more past due includes fully-insured loans of $633 million and nonperforming loans of $1.3 billion. Consumer real estate loans current or less than 30 days past due includes $1.4 billion, and direct/indirect consumer includes $55 million of nonperforming loans.

[2] Total outstandings primarily includes auto and specialty lending loans and leases of $48.5 billion, U.S. securities-based lending loans of $51.1 billion and non-U.S. consumer loans of $3.0 billion.

[3] Consumer loans accounted for under the fair value option includes residential mortgage loans of $279 million and home equity loans of $339 million. Commercial loans accounted for under the fair value option includes U.S. commercial loans of $4.6 billion and non-U.S. commercial loans of $2.6 billion. For more information, see *Note 20 – Fair Value Measurements* and *Note 21 – Fair Value Option*.

[4] Total outstandings includes U.S. commercial real estate loans of $58.2 billion and non-U.S. commercial real estate loans of $4.8 billion.

[5] Includes Paycheck Protection Program loans.

[6] Total outstandings includes loans and leases pledged as collateral of $13.0 billion. The Corporation also pledged $146.6 billion of loans with no related outstanding borrowings to secure potential borrowing capacity with the Federal Reserve Bank and Federal Home Loan Bank.

The Corporation has entered into long-term credit protection agreements with FNMA and FHLMC on loans totaling $9.5 billion and $10.5 billion at December 31, 2022 and 2021, providing full credit protection on residential mortgage loans that become severely delinquent. All of these loans are individually insured, and therefore the Corporation does not record an allowance for credit losses related to these loans.

Nonperforming Loans and Leases

Commercial nonperforming loans decreased to $1.1 billion at December 31, 2022 from $1.6 billion at December 31, 2021, as paydowns and returns to performing status more than offset new downgrades to nonaccrual status. Consumer nonperforming loans decreased to $2.8 billion at December 31, 2022 from $3.0 billion at December 31, 2021 primarily due to decreases from consumer real estate loan sales, partially offset by increases from loans whose prior-period deferrals expired and were modified in TDRs during the first quarter of 2022.

The following table presents the Corporation's nonperforming loans and leases, including nonperforming TDRs, and loans accruing past due 90 days or more at December 31, 2022 and 2021. Nonperforming LHFS are excluded from nonperforming loans and leases as they are recorded at either fair value or the lower of cost or fair value. For more information on the criteria for classification as nonperforming, see *Note 1 – Summary of Significant Accounting Principles.*

Credit Quality

(Dollars in millions)	Nonperforming Loans and Leases		Accruing Past Due 90 Days or More	
	December 31			
	2022	2021	**2022**	2021
Residential mortgage [1]	**$ 2,167**	$ 2,284	**$ 368**	$ 634
With no related allowance [2]	**1,973**	1,950	**—**	—
Home equity [1]	**510**	630	**—**	—
With no related allowance [2]	**393**	414	**—**	—
Credit Card	**n/a**	n/a	**717**	487
Direct/indirect consumer	**77**	75	**2**	11
Total consumer	**2,754**	2,989	**1,087**	1,132
U.S. commercial	**553**	825	**190**	171
Non-U.S. commercial	**212**	268	**25**	19
Commercial real estate	**271**	382	**46**	40
Commercial lease financing	**4**	80	**8**	8
U.S. small business commercial	**14**	23	**355**	87
Total commercial	**1,054**	1,578	**624**	325
Total nonperforming loans	**$ 3,808**	$ 4,567	**$ 1,711**	$ 1,457
Percentage of outstanding loans and leases	**0.37 %**	0.47 %	**0.16 %**	0.15 %

[1] Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2022 and 2021 residential mortgage included $260 million and $444 million of loans on which interest had been curtailed by the FHA, and therefore were no longer accruing interest, although principal was still insured, and $108 million and $190 million of loans on which interest was still accruing.

[2] Primarily relates to loans for which the estimated fair value of the underlying collateral less any costs to sell is greater than the amortized cost of the loans as of the reporting date.

n/a = not applicable

Credit Quality Indicators

The Corporation monitors credit quality within its Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments based on primary credit quality indicators. For more information on the portfolio segments, see *Note 1 – Summary of Significant Accounting Principles.* Within the Consumer Real Estate portfolio segment, the primary credit quality indicators are refreshed LTV and refreshed Fair Isaac Corporation (FICO) score. Refreshed LTV measures the carrying value of the loan as a percentage of the value of the property securing the loan, refreshed quarterly. Home equity loans are evaluated using CLTV, which measures the carrying value of the Corporation's loan and available line of credit combined with any outstanding senior liens against the property as a percentage of the value of the property securing the loan, refreshed quarterly. FICO score measures the creditworthiness of the borrower based on the financial obligations of the borrower and the borrower's credit history. FICO scores are typically refreshed quarterly or more frequently. Certain borrowers (e.g., borrowers that have had debts discharged in a bankruptcy proceeding) may not have their FICO scores updated. FICO scores are also a primary credit quality indicator for the Credit Card and Other Consumer portfolio segment and the business card portfolio within U.S. small business commercial. Within the Commercial portfolio segment, loans are evaluated using the internal classifications of pass rated or reservable criticized as the primary credit quality indicators. The term reservable criticized refers to those commercial loans that are internally classified or listed by the Corporation as Special Mention, Substandard or Doubtful, which are asset quality categories defined by regulatory authorities. These assets have an elevated level of risk and may have a high probability of default or total loss. Pass rated refers to all loans not considered reservable criticized. In addition to these primary credit quality indicators, the Corporation uses other credit quality indicators for certain types of loans.

The following tables present certain credit quality indicators and gross charge-offs for the Corporation's Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments by year of origination, except for revolving loans and revolving loans that were modified into term loans, which are shown on an aggregate basis at December 31, 2022.

Residential Mortgage – Credit Quality Indicators By Vintage

(Dollars in millions)	Total as of December 31, 2022	Term Loans by Origination Year: 2022	2021	2020	2019	2018	Prior
Residential Mortgage							
Refreshed LTV							
Less than or equal to 90 percent	**$ 215,713**	$ 39,625	$ 81,437	$ 37,228	$ 18,980	$ 5,734	$ 32,709
Greater than 90 percent but less than or equal to 100 percent	**1,615**	950	530	93	15	8	19
Greater than 100 percent	**648**	374	169	43	15	8	39
Fully-insured loans	**11,694**	580	3,667	3,102	949	156	3,240
Total Residential Mortgage	**$ 229,670**	$ 41,529	$ 85,803	$ 40,466	$ 19,959	$ 5,906	$ 36,007
Residential Mortgage							
Refreshed FICO score							
Less than 620	**$ 2,156**	$ 377	$ 518	$ 373	$ 124	$ 84	$ 680
Greater than or equal to 620 and less than 680	**4,978**	1,011	1,382	840	329	233	1,183
Greater than or equal to 680 and less than 740	**25,444**	5,411	8,290	4,369	2,187	830	4,357
Greater than or equal to 740	**185,398**	34,150	71,946	31,782	16,370	4,603	26,547
Fully-insured loans	**11,694**	580	3,667	3,102	949	156	3,240
Total Residential Mortgage	**$ 229,670**	$ 41,529	$ 85,803	$ 40,466	$ 19,959	$ 5,906	$ 36,007
Gross charge-offs	**$ 161**	$ —	$ 6	$ 5	$ 6	$ 1	$ 143

Home Equity - Credit Quality Indicators

(Dollars in millions)	Total	Home Equity Loans and Reverse Mortgages [1]	Revolving Loans	Revolving Loans Converted to Term Loans
	December 31, 2022			
Home Equity				
Refreshed LTV				
Less than or equal to 90 percent	**$ 26,395**	**$ 1,304**	**$ 19,960**	**$ 5,131**
Greater than 90 percent but less than or equal to 100 percent	**62**	**20**	**24**	**18**
Greater than 100 percent	**106**	**37**	**35**	**34**
Total Home Equity	**$ 26,563**	**$ 1,361**	**$ 20,019**	**$ 5,183**
Home Equity				
Refreshed FICO score				
Less than 620	**$ 683**	**$ 166**	**$ 189**	**$ 328**
Greater than or equal to 620 and less than 680	**1,190**	**152**	**507**	**531**
Greater than or equal to 680 and less than 740	**4,321**	**312**	**2,747**	**1,262**
Greater than or equal to 740	**20,369**	**731**	**16,576**	**3,062**
Total Home Equity	**$ 26,563**	**$ 1,361**	**$ 20,019**	**$ 5,183**
Gross charge-offs	**$ 45**	**$ 5**	**$ 24**	**$ 16**

[1] Includes reverse mortgages of $937 million and home equity loans of $424 million, which are no longer originated.

Credit Card and Direct/Indirect Consumer – Credit Quality Indicators By Vintage

(Dollars in millions)	Direct/Indirect: Total Direct/Indirect as of December 31, 2022	Revolving Loans	Term Loans by Origination Year: 2022	2021	2020	2019	2018	Prior	Credit Card: Total Credit Card as of December 31, 2022	Revolving Loans	Revolving Loans Converted to Term Loans [1]
Refreshed FICO score											
Less than 620	**$ 847**	$ 12	$ 237	$ 301	$ 113	$ 84	$ 43	$ 57	**$ 4,056**	$ 3,866	$ 190
Greater than or equal to 620 and less than 680	**2,521**	12	1,108	816	269	150	69	97	**10,994**	10,805	189
Greater than or equal to 680 and less than 740	**8,895**	52	4,091	2,730	992	520	214	296	**32,186**	32,017	169
Greater than or equal to 740	**39,679**	83	16,663	11,392	5,630	2,992	1,236	1,683	**46,185**	46,142	43
Other internal credit metrics [2,3]	**54,294**	53,404	259	305	70	57	40	159	**—**	—	—
Total credit card and other consumer	**$ 106,236**	$ 53,563	$ 22,358	$ 15,544	$ 7,074	$ 3,803	$ 1,602	$ 2,292	**$ 93,421**	$ 92,830	$ 591
Gross charge-offs	**$ 232**	$ 7	$ 31	$ 79	$ 34	$ 27	$ 14	$ 40	**$ 1,985**	$ 1,909	**$ 76**

[1] Represents TDRs that were modified into term loans.
[2] Other internal credit metrics may include delinquency status, geography or other factors.
[3] Direct/indirect consumer includes $53.4 billion of securities-based lending, which is typically supported by highly liquid collateral with market value greater than or equal to the outstanding loan balance and therefore has minimal credit risk at December 31, 2022.

Commercial – Credit Quality Indicators By Vintage [1]

(Dollars in millions)	Total as of December 31, 2022	Term Loans Amortized Cost Basis by Origination Year 2022	2021	2020	2019	2018	Prior	Revolving Loans
U.S. Commercial								
Risk ratings								
Pass rated	**$ 348,447**	$ 61,200	$ 39,717	$ 18,609	$ 16,566	$ 8,749	$ 30,282	$ 173,324
Reservable criticized	**10,034**	278	794	697	884	1,202	856	5,323
Total U.S. Commercial	**$ 358,481**	$ 61,478	$ 40,511	$ 19,306	$ 17,450	$ 9,951	$ 31,138	$ 178,647
Gross charge-offs	**$ 151**	$ 2	$ 24	$ 24	$ 9	$ 6	$ 13	$ 73
Non-U.S. Commercial								
Risk ratings								
Pass rated	**$ 121,890**	$ 24,839	$ 19,098	$ 5,183	$ 3,882	$ 2,423	$ 4,697	$ 61,768
Reservable criticized	**2,589**	45	395	331	325	98	475	920
Total Non-U.S. Commercial	**$ 124,479**	$ 24,884	$ 19,493	$ 5,514	$ 4,207	$ 2,521	$ 5,172	$ 62,688
Gross charge-offs	**$ 41**	$ —	$ 3	$ 1	$ —	$ 37	$ —	$ —
Commercial Real Estate								
Risk ratings								
Pass rated	**$ 64,619**	$ 15,290	$ 13,089	$ 5,756	$ 9,013	$ 4,384	$ 8,606	$ 8,481
Reservable criticized	**5,147**	11	837	545	1,501	1,151	1,017	85
Total Commercial Real Estate	**$ 69,766**	$ 15,301	$ 13,926	$ 6,301	$ 10,514	$ 5,535	$ 9,623	$ 8,566
Gross charge-offs	**$ 75**	$ —	$ —	$ 6	$ —	$ 26	$ 43	$ —
Commercial Lease Financing								
Risk ratings								
Pass rated	**$ 13,404**	$ 3,255	$ 2,757	$ 1,955	$ 1,578	$ 1,301	$ 2,558	$ —
Reservable criticized	**240**	9	35	12	71	50	63	—
Total Commercial Lease Financing	**$ 13,644**	$ 3,264	$ 2,792	$ 1,967	$ 1,649	$ 1,351	$ 2,621	$ —
Gross charge-offs	**$ 8**	$ —	$ 4	$ —	$ 4	$ —	$ —	$ —
U.S. Small Business Commercial [2]								
Risk ratings								
Pass rated	**$ 8,726**	$ 1,825	$ 1,953	$ 1,408	$ 864	$ 624	$ 1,925	$ 127
Reservable criticized	**329**	11	35	48	76	51	105	3
Total U.S. Small Business Commercial	**$ 9,055**	$ 1,836	$ 1,988	$ 1,456	$ 940	$ 675	$ 2,030	$ 130
Gross charge-offs	**$ 31**	$ —	$ 1	$ 11	$ 4	$ 1	$ 6	$ 8
Total	**$ 575,425**	$ 106,763	$ 78,710	$ 34,544	$ 34,760	$ 20,033	$ 50,584	$ 250,031
Total gross charge-offs	**$ 306**	$ 2	$ 32	$ 42	$ 17	$ 70	$ 62	$ 81

(1) Excludes $5.4 billion of loans accounted for under the fair value option at December 31, 2022.

(2) Excludes U.S. Small Business Card loans of $8.5 billion. Refreshed FICO scores for this portfolio are $297 million for less than 620; $859 million for greater than or equal to 620 and less than 680; $2.4 billion for greater than or equal to 680 and less than 740; and $5.0 billion greater than or equal to 740. Excludes U.S. Small Business Card loans gross charge-offs of $172 million.

The following tables present certain credit quality indicators for the Corporation's Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments by year of origination, except for revolving loans and revolving loans that were modified into term loans, which are shown on an aggregate basis at December 31, 2021.

Residential Mortgage – Credit Quality Indicators By Vintage

		Term Loans by Origination Year					
(Dollars in millions)	Total as of December 31, 2021	2021	2020	2019	2018	2017	Prior
Residential Mortgage							
Refreshed LTV							
Less than or equal to 90 percent	$ 206,562	$ 87,051	$ 43,597	$ 23,205	$ 7,392	$ 10,956	$ 34,361
Greater than 90 percent but less than or equal to 100 percent	1,938	1,401	331	81	17	14	94
Greater than 100 percent	759	520	112	29	11	12	75
Fully-insured loans	12,704	3,845	3,486	1,150	216	235	3,772
Total Residential Mortgage	$ 221,963	$ 92,817	$ 47,526	$ 24,465	$ 7,636	$ 11,217	$ 38,302
Residential Mortgage							
Refreshed FICO score							
Less than 620	$ 2,451	$ 636	$ 442	$ 140	$ 120	$ 104	$ 1,009
Greater than or equal to 620 and less than 680	5,199	1,511	1,123	477	294	307	1,487
Greater than or equal to 680 and less than 740	24,532	8,822	5,454	2,785	1,057	1,434	4,980
Greater than or equal to 740	177,077	78,003	37,021	19,913	5,949	9,137	27,054
Fully-insured loans	12,704	3,845	3,486	1,150	216	235	3,772
Total Residential Mortgage	$ 221,963	$ 92,817	$ 47,526	$ 24,465	$ 7,636	$ 11,217	$ 38,302

Home Equity - Credit Quality Indicators

(Dollars in millions)	Total	Home Equity Loans and Reverse Mortgages [1]	Revolving Loans	Revolving Loans Converted to Term Loans
	December 31, 2021			
Home Equity				
Refreshed LTV				
Less than or equal to 90 percent	$ 27,594	$ 1,773	$ 19,095	$ 6,726
Greater than 90 percent but less than or equal to 100 percent	130	55	34	41
Greater than 100 percent	211	85	54	72
Total Home Equity	$ 27,935	$ 1,913	$ 19,183	$ 6,839
Home Equity				
Refreshed FICO score				
Less than 620	$ 893	$ 244	$ 209	$ 440
Greater than or equal to 620 and less than 680	1,434	222	495	717
Greater than or equal to 680 and less than 740	4,625	468	2,493	1,664
Greater than or equal to 740	20,983	979	15,986	4,018
Total Home Equity	$ 27,935	$ 1,913	$ 19,183	$ 6,839

[1] Includes reverse mortgages of $1.3 billion and home equity loans of $582 million, which are no longer originated.

Credit Card and Direct/Indirect Consumer – Credit Quality Indicators By Vintage

(Dollars in millions)	Direct/Indirect								Credit Card		
			Term Loans by Origination Year								
	Total Direct/ Indirect as of December 31, 2021	Revolving Loans	2021	2020	2019	2018	2017	Prior	Total Credit Card as of December 31, 2021	Revolving Loans	Revolving Loans Converted to Term Loans [1]
Refreshed FICO score											
Less than 620	$ 685	$ 13	$ 179	$ 115	$ 129	$ 79	$ 101	$ 69	$ 3,017	$ 2,857	$ 160
Greater than or equal to 620 and less than 680	2,313	14	1,170	414	313	148	134	120	9,264	9,064	200
Greater than or equal to 680 and less than 740	8,530	60	4,552	1,659	1,126	466	314	353	28,347	28,155	192
Greater than or equal to 740	37,164	94	15,876	8,642	6,465	2,679	1,573	1,835	40,810	40,762	48
Other internal credit metrics [2, 3]	54,868	54,173	283	53	77	75	63	144	—	—	—
Total credit card and other consumer	$ 103,560	$ 54,354	$ 22,060	$ 10,883	$ 8,110	$ 3,447	$ 2,185	$ 2,521	$ 81,438	$ 80,838	$ 600

[1] Represents TDRs that were modified into term loans.
[2] Other internal credit metrics may include delinquency status, geography or other factors.
[3] Direct/indirect consumer includes $54.2 billion of securities-based lending, which is typically supported by highly liquid collateral with market value greater than or equal to the outstanding loan balance and therefore has minimal credit risk at December 31, 2021.

Commercial – Credit Quality Indicators By Vintage [1]

(Dollars in millions)	Total as of December 31, 2021	Term Loans Amortized Cost Basis by Origination Year						
		2021	2020	2019	2018	2017	Prior	Revolving Loans
U.S. Commercial								
Risk ratings								
Pass rated	$ 315,618	$ 55,862	$ 25,012	$ 23,373	$ 11,439	$ 10,426	$ 23,877	$ 165,629
Reservable criticized	10,318	598	687	1,308	1,615	514	1,072	4,524
Total U.S. Commercial	$ 325,936	$ 56,460	$ 25,699	$ 24,681	$ 13,054	$ 10,940	$ 24,949	$ 170,153
Non-U.S. Commercial								
Risk ratings								
Pass rated	$ 110,787	$ 25,749	$ 8,703	$ 7,133	$ 4,521	$ 3,016	$ 3,062	$ 58,603
Reservable criticized	2,479	223	324	487	275	257	216	697
Total Non-U.S. Commercial	$ 113,266	$ 25,972	$ 9,027	$ 7,620	$ 4,796	$ 3,273	$ 3,278	$ 59,300
Commercial Real Estate								
Risk ratings								
Pass rated	$ 55,511	$ 14,402	$ 7,244	$ 11,237	$ 5,710	$ 3,326	$ 6,831	$ 6,761
Reservable criticized	7,498	277	990	2,237	1,710	596	1,464	224
Total Commercial Real Estate	$ 63,009	$ 14,679	$ 8,234	$ 13,474	$ 7,420	$ 3,922	$ 8,295	$ 6,985
Commercial Lease Financing								
Risk ratings								
Pass rated	$ 14,438	$ 3,280	$ 2,485	$ 2,427	$ 2,030	$ 1,741	$ 2,475	$ —
Reservable criticized	387	25	18	91	67	48	138	—
Total Commercial Lease Financing	$ 14,825	$ 3,305	$ 2,503	$ 2,518	$ 2,097	$ 1,789	$ 2,613	$ —
U.S. Small Business Commercial [2]								
Risk ratings								
Pass rated	$ 11,618	$ 4,257	$ 2,922	$ 1,059	$ 763	$ 623	$ 1,853	$ 141
Reservable criticized	433	12	29	91	87	64	147	3
Total U.S. Small Business Commercial	$ 12,051	$ 4,269	$ 2,951	$ 1,150	$ 850	$ 687	$ 2,000	$ 144
Total	$ 529,087	$ 104,685	$ 48,414	$ 49,443	$ 28,217	$ 20,611	$ 41,135	$ 236,582

[1] Excludes $7.2 billion of loans accounted for under the fair value option at December 31, 2021.
[2] Excludes U.S. Small Business Card loans of $7.1 billion. Refreshed FICO scores for this portfolio are $192 million for less than 620; $618 million for greater than or equal to 620 and less than 680; $1.9 billion for greater than or equal to 680 and less than 740; and $4.4 billion greater than or equal to 740.

During 2022, commercial credit quality showed some signs of stabilization. Commercial reservable criticized utilized exposure decreased to $19.3 billion at December 31, 2022 from $22.4 billion (to 3.12 percent from 3.91 percent of total commercial reservable utilized exposure) at December 31, 2021, which was broad-based across industries.

Troubled Debt Restructurings

Consumer Real Estate

Modifications of consumer real estate loans are classified as TDRs when the borrower is experiencing financial difficulties and a concession has been granted. Concessions may include reductions in interest rates, capitalization of past due amounts, principal and/or interest forbearance, payment extensions, principal and/or interest forgiveness, or combinations thereof. Prior to permanently modifying a loan, the Corporation may enter into trial modifications with certain borrowers under both government and proprietary programs. Trial modifications generally represent a three- to four-month period during which the borrower makes monthly payments under the anticipated modified payment terms. Upon successful completion of the trial period, the Corporation and the borrower enter into a permanent modification. Binding trial modifications are classified as TDRs when the trial offer is made and continue to be classified as TDRs regardless of whether the borrower enters into a permanent modification.

Consumer real estate loans of $211 million that have been discharged in Chapter 7 bankruptcy with no change in repayment terms and not reaffirmed by the borrower were included in TDRs at December 31, 2022, of which $53 million were classified as nonperforming and $33 million were loans fully insured.

At December 31, 2022 and 2021, remaining commitments to lend additional funds to debtors whose terms have been modified in a consumer real estate TDR were not significant. Consumer real estate foreclosed properties totaled $121 million and $101 million at December 31, 2022 and 2021. The carrying value of consumer real estate loans, including fully-insured loans, for which formal foreclosure proceedings were in process at December 31, 2022 and 2021 was $871 million and $1.1 billion. During 2022 and 2021, the Corporation reclassified $190 million and $64 million of consumer real estate loans to foreclosed properties or, for properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans), to other assets. The reclassifications represent non-cash investing activities and, accordingly, are not reflected in the Consolidated Statement of Cash Flows.

The table below presents the December 31, 2022, 2021 and 2020 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of consumer real estate loans that were modified in TDRs during 2022, 2021 and 2020. The following Consumer Real Estate portfolio segment tables include loans that were initially classified as TDRs during the period and also loans that had previously been classified as TDRs and were modified again during the period.

Consumer Real Estate – TDRs Entered into During 2022, 2021 and 2020

(Dollars in millions)	Unpaid Principal Balance	Carrying Value	Pre-Modification Interest Rate	Post-Modification Interest Rate [1]
		December 31, 2022		
Residential mortgage	**$ 1,144**	**$ 1,015**	**3.52 %**	**3.40 %**
Home equity	**238**	**191**	**4.61**	**4.65**
Total	**$ 1,382**	**$ 1,206**	**3.71**	**3.62**
		December 31, 2021		
Residential mortgage	$ 891	$ 788	3.48 %	3.38 %
Home equity	107	77	3.60	3.59
Total	$ 998	$ 865	3.49	3.41
		December 31, 2020		
Residential mortgage	$ 732	$ 646	3.66 %	3.59 %
Home equity	87	69	3.67	3.61
Total	$ 819	$ 715	3.66	3.59

[1] The post-modification interest rate reflects the interest rate applicable only to permanently completed modifications, which exclude loans that are in a trial modification period.

The table below presents the December 31, 2022, 2021 and 2020 carrying value for consumer real estate loans that were modified in a TDR during 2022, 2021 and 2020, by type of modification.

Consumer Real Estate – Modification Programs

(Dollars in millions)	TDRs Entered into During 2022	2021	2020
Modifications under government programs	**$ 2**	$ 4	$ 13
Modifications under proprietary programs	**1,100**	774	570
Loans discharged in Chapter 7 bankruptcy [1]	**14**	33	53
Trial modifications	**90**	54	79
Total modifications	**$ 1,206**	$ 865	$ 715

[1] Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.

The following table presents the carrying value of consumer real estate loans that entered into payment default during 2022, 2021 and 2020 that were modified in a TDR during the 12 months preceding payment default. A payment default for consumer real estate TDRs is recognized when a borrower has missed three monthly payments (not necessarily consecutively) since modification.

Consumer Real Estate – TDRs Entering Payment Default that were Modified During the Preceding 12 Months

(Dollars in millions)	2022	2021	2020
Modifications under government programs	$ —	$ 4	$ 16
Modifications under proprietary programs	189	128	51
Loans discharged in Chapter 7 bankruptcy [1]	2	9	19
Trial modifications [2]	25	19	54
Total modifications	**$ 216**	$ 160	$ 140

[1] Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.
[2] Includes trial modification offers to which the customer did not respond.

Credit Card and Other Consumer

The Corporation seeks to assist customers who are experiencing financial difficulty by modifying loans while ensuring compliance with federal and local laws and guidelines. Credit card and other consumer loan modifications generally involve reducing the interest rate on the account, placing the customer on a fixed payment plan not exceeding 60 months and canceling the customer's available line of credit, all of which are considered TDRs. The Corporation makes loan modifications directly with borrowers for debt held only by the Corporation (internal programs). Additionally, the Corporation makes loan modifications for borrowers working with third-party renegotiation agencies that provide solutions to customers' entire unsecured debt structures (external programs). The Corporation classifies other secured consumer loans that have been discharged in Chapter 7 bankruptcy as TDRs, which are written down to collateral value and placed on nonaccrual status no later than the time of discharge.

The table below provides information on the Corporation's Credit Card and Other Consumer TDR portfolio including the December 31, 2022, 2021 and 2020 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of loans that were modified in TDRs during 2022, 2021 and 2020.

Credit Card and Other Consumer – TDRs Entered into During 2022, 2021 and 2020

(Dollars in millions)	Unpaid Principal Balance	Carrying Value [1]	Pre-Modification Interest Rate	Post-Modification Interest Rate
		December 31, 2022		
Credit card	**$ 284**	**$ 293**	**22.34 %**	**3.89 %**
Direct/Indirect consumer	**6**	**5**	**5.51**	**5.50**
Total	**$ 290**	**$ 298**	**22.06**	**3.92**
		December 31, 2021		
Credit card	$ 237	$ 248	18.45 %	4.09 %
Direct/Indirect consumer	23	16	5.88	5.88
Total	$ 260	$ 264	17.68	4.20
		December 31, 2020		
Credit card	$ 269	$ 277	18.16 %	5.63 %
Direct/Indirect consumer	52	37	5.83	5.83
Total	$ 321	$ 314	16.70	5.65

[1] Includes accrued interest and fees.

The table below presents the December 31, 2022, 2021 and 2020 carrying value for Credit Card and Other Consumer loans that were modified in a TDR during 2022, 2021 and 2020 by program type.

Credit Card and Other Consumer – TDRs by Program Type at December 31 [1]

(Dollars in millions)	2022	2021	2020
Internal programs	**$ 251**	$ 214	$ 225
External programs	**44**	44	73
Other	**3**	6	16
Total	**$ 298**	$ 264	$ 314

[1] Includes accrued interest and fees.

Credit card and other consumer loans are deemed to be in payment default during the quarter in which a borrower misses the second of two consecutive payments. Payment defaults are one of the factors considered when projecting future cash flows in the calculation of the allowance for loan and lease losses for credit card and other consumer. Based on historical experience, the Corporation estimates that 15 percent of new credit card TDRs and 15 percent of new direct/indirect consumer TDRs may be in payment default within 12 months after modification.

Commercial Loans

Modifications of loans to commercial borrowers that are experiencing financial difficulty are designed to reduce the Corporation's loss exposure while providing the borrower with an opportunity to work through financial difficulties, often to avoid foreclosure or bankruptcy. Each modification is unique and reflects the individual circumstances of the borrower. Modifications that result in a TDR may include extensions of maturity at a concessionary (below market) rate of interest, payment forbearances or other actions designed to benefit the borrower while mitigating the Corporation's risk exposure.

Reductions in interest rates are rare. Instead, the interest rates are typically increased, although the increased rate may not represent a market rate of interest. Infrequently, concessions may also include principal forgiveness in connection with foreclosure, short sale or other settlement agreements leading to termination or sale of the loan.

At the time of restructuring, the loans are remeasured to reflect the impact, if any, on projected cash flows resulting from the modified terms. If a portion of the loan is deemed to be uncollectible, a charge-off may be recorded at the time of restructuring. Alternatively, a charge-off may have already been recorded in a previous period such that no charge-off is required at the time of modification.

During 2022, the carrying value of the Corporation's commercial loans that were modified as TDRs was $1.9 billion compared to $1.3 billion and $1.2 billion for 2021 and 2020. At December 31, 2022, 2021 and 2020, the Corporation had commitments to lend $358 million, $283 million and $402 million to commercial borrowers whose loans were classified as TDRs. The balance of commercial TDRs in payment default was $105 million, $262 million and $218 million at December 31, 2022, 2021 and 2020.

Loans Held-for-sale

The Corporation had LHFS of $6.9 billion and $15.6 billion at December 31, 2022 and 2021. Cash and non-cash proceeds from sales and paydowns of loans originally classified as LHFS were $32.0 billion, $43.6 billion and $20.1 billion for 2022, 2021 and 2020, respectively. Cash used for originations and purchases of LHFS totaled $24.9 billion, $37.3 billion and $19.7 billion for 2022, 2021 and 2020, respectively. Also included were non-cash net transfers into LHFS of $1.9 billion during 2022, primarily driven by the transfer of a $1.6 billion affinity card loan portfolio to held for sale that was sold in October 2022, and $808 million during 2021.

Accrued Interest Receivable

Accrued interest receivable for loans and leases and loans held-for-sale at December 31, 2022 and 2021 was $3.8 billion and $2.2 billion and is reported in customer and other receivables on the Consolidated Balance Sheet.

Outstanding credit card loan balances include unpaid principal, interest and fees. Credit card loans are not classified as nonperforming but are charged off no later than the end of the month in which the account becomes 180 days past due, within 60 days after receipt of notification of death or bankruptcy, or upon confirmation of fraud. During 2022 and 2021, the Corporation reversed $332 million and $446 million of interest and fee income against the income statement line item in which it was originally recorded upon charge-off of the principal balance of the loan.

For the outstanding residential mortgage, home equity, direct/indirect consumer and commercial loan balances classified as nonperforming during 2022 and 2021, interest and fee income reversed at the time the loans were classified as nonperforming was not significant. For more information on the Corporation's nonperforming loan policies, see *Note 1 – Summary of Significant Accounting Principles.*

Allowance for Credit Losses

The allowance for credit losses is estimated using quantitative and qualitative methods that consider a variety of factors, such as historical loss experience, the current credit quality of the portfolio and an economic outlook over the life of the loan. Qualitative reserves cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the quantitative methods or the economic assumptions. The Corporation incorporates forward-looking information through the use of several macroeconomic scenarios in determining the weighted economic outlook over the forecasted life of the assets. These scenarios include key macroeconomic variables such as gross domestic product, unemployment rate, real estate prices and corporate bond spreads. The scenarios that are chosen each quarter and the weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, internal and third-party economist views, and industry trends. For more information on the Corporation's credit loss accounting policies including the allowance for credit losses, see *Note 1 – Summary of Significant Accounting Principles*.

The December 31, 2022 estimate for allowance for credit losses was based on various economic scenarios, including a baseline scenario derived from consensus estimates, an adverse scenario reflecting an extended moderate recession, a downside scenario reflecting persistent inflation and interest rates above the baseline scenario, a tail risk scenario similar to the severely adverse scenario used in stress testing and an upside scenario that considers the potential for improvement above the baseline scenario. The overall economic outlook is weighted 95 percent towards a recessionary environment in 2023, with continued inflationary pressures leading to lower GDP and higher unemployment rate expectations as compared to the prior year. The weighted economic outlook assumes that the U.S. average unemployment rate will be above five and a half percent by the fourth quarter of 2023 and will slowly decline to five percent by the fourth quarter of 2024. Additionally, in this economic outlook, U.S. gross domestic product is forecasted to contract at 0.4 percent and grow at 1.2 percent year-over-year in the fourth quarters of 2023 and 2024. For comparison, as of December 31, 2021, the weighted economic outlook for the U.S. average unemployment rate was forecasted to be just above five percent by the fourth quarter of 2022 and slowly decline to just under five percent by the fourth quarter of 2023 and U.S. gross domestic product was forecasted at 2.1 percent and 1.9 percent year-over-year in the fourth quarters of 2022 and 2023.

The allowance for credit losses at December 31, 2022 was $14.2 billion, an increase of $379 million compared to December 31, 2021. The increase in the allowance for credit losses was primarily driven by loan growth and a dampened macroeconomic outlook, partially offset by a reserve release for reduced pandemic uncertainties. The change in the allowance for credit losses was comprised of a net increase of $295 million in the allowance for loan and lease losses and an increase of $84 million in the reserve for unfunded lending commitments. The increase in the allowance for credit losses was attributed to increases in the credit card and other consumer portfolios of $341 million, and commercial portfolio of $177 million, partially offset by a decrease in the consumer real estate portfolio of $139 million. The provision for credit losses increased $7.1 billion to an expense of $2.5 billion in 2022 compared to a benefit of $4.6 billion in 2021 and an expense of $11.3 billion in 2020. The increase in the provision for credit losses in 2022 was primarily driven by loan growth and a dampened macroeconomic outlook, partially offset by reduced pandemic uncertainties. The benefit in 2021 was primarily due to an improved macroeconomic outlook and credit quality.

Outstanding loans and leases excluding loans accounted for under the fair value option increased $68.7 billion in 2022 primarily driven by commercial loans, which increased $47.7 billion, driven by broad-based growth, and consumer loans which

increased $21.0 billion, primarily driven by credit card and residential mortgage.

The changes in the allowance for credit losses, including net charge-offs and provision for loan and lease losses, are detailed in the table below.

(Dollars in millions)	Consumer Real Estate	Credit Card and Other Consumer	Commercial	Total
		2022		
Allowance for loan and lease losses, January 1	**$ 557**	**$ 6,476**	**$ 5,354**	**$ 12,387**
Loans and leases charged off	**(206)**	**(2,755)**	**(478)**	**(3,439)**
Recoveries of loans and leases previously charged off	**224**	**882**	**161**	**1,267**
Net charge-offs	**18**	**(1,873)**	**(317)**	**(2,172)**
Provision for loan and lease losses	**(164)**	**2,215**	**409**	**2,460**
Other	**9**	**(1)**	**(1)**	**7**
Allowance for loan and lease losses, December 31	**420**	**6,817**	**5,445**	**12,682**
Reserve for unfunded lending commitments, January 1	**96**	**—**	**1,360**	**1,456**
Provision for unfunded lending commitments	**(3)**	**—**	**86**	**83**
Other	**1**	**—**	**—**	**1**
Reserve for unfunded lending commitments, December 31	**94**	**—**	**1,446**	**1,540**
Allowance for credit losses, December 31	**$ 514**	**$ 6,817**	**$ 6,891**	**$ 14,222**
		2021		
Allowance for loan and lease losses, January 1	$ 858	$ 9,213	$ 8,731	$ 18,802
Loans and leases charged off	(78)	(3,000)	(719)	(3,797)
Recoveries of loans and leases previously charged off	225	1,006	323	1,554
Net charge-offs	147	(1,994)	(396)	(2,243)
Provision for loan and lease losses	(449)	(744)	(2,980)	(4,173)
Other	1	1	(1)	1
Allowance for loan and lease losses, December 31	557	6,476	5,354	12,387
Reserve for unfunded lending commitments, January 1	137	—	1,741	1,878
Provision for unfunded lending commitments	(41)	—	(380)	(421)
Other	—	—	(1)	(1)
Reserve for unfunded lending commitments, December 31	96	—	1,360	1,456
Allowance for credit losses, December 31	$ 653	$ 6,476	$ 6,714	$ 13,843
		2020		
Allowance for loan and lease losses, January 1	$ 440	$ 7,430	$ 4,488	$ 12,358
Loans and leases charged off	(98)	(3,646)	(1,675)	(5,419)
Recoveries of loans and leases previously charged off	201	891	206	1,298
Net charge-offs	103	(2,755)	(1,469)	(4,121)
Provision for loan and lease losses	307	4,538	5,720	10,565
Other	8	—	(8)	—
Allowance for loan and lease losses, December 31	858	9,213	8,731	18,802
Reserve for unfunded lending commitments, January 1	119	—	1,004	1,123
Provision for unfunded lending commitments	18	—	737	755
Reserve for unfunded lending commitments, December 31	137	—	1,741	1,878
Allowance for credit losses, December 31	$ 995	$ 9,213	$ 10,472	$ 20,680

NOTE 6 Securitizations and Other Variable Interest Entities

The Corporation utilizes VIEs in the ordinary course of business to support its own and its customers' financing and investing needs. The Corporation routinely securitizes loans and debt securities using VIEs as a source of funding for the Corporation and as a means of transferring the economic risk of the loans or debt securities to third parties. The assets are transferred into a trust or other securitization vehicle such that the assets are legally isolated from the creditors of the Corporation and are not available to satisfy its obligations. These assets can only be used to settle obligations of the trust or other securitization vehicle. The Corporation also administers, structures or invests in other VIEs including CDOs, investment vehicles and other entities. For more information on the Corporation's use of VIEs, see *Note 1 – Summary of Significant Accounting Principles.*

The tables in this Note present the assets and liabilities of consolidated and unconsolidated VIEs at December 31, 2022 and 2021 in situations where the Corporation has continuing involvement with transferred assets or if the Corporation otherwise has a variable interest in the VIE. The tables also present the Corporation's maximum loss exposure at December 31, 2022 and 2021 resulting from its involvement with consolidated VIEs and unconsolidated VIEs in which the Corporation holds a variable interest. The Corporation's maximum loss exposure is based on the unlikely event that all of the assets in the VIEs become worthless and incorporates not only potential losses associated with assets recorded on the Consolidated Balance Sheet but also potential losses associated with off-balance sheet commitments, such as unfunded liquidity commitments and other contractual arrangements. The Corporation's maximum loss exposure does not include losses previously recognized through write-downs of assets.

The Corporation invests in ABS issued by third-party VIEs with which it has no other form of involvement and enters into certain commercial lending arrangements that may also incorporate the use of VIEs, for example to hold collateral. These securities and loans are included in *Note 4 – Securities* or *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses.* In addition, the Corporation has used VIEs in connection with its funding activities.

The Corporation did not provide financial support to consolidated or unconsolidated VIEs during 2022, 2021 and 2020 that it was not previously contractually required to provide, nor does it intend to do so.

The Corporation had liquidity commitments, including written put options and collateral value guarantees, with certain unconsolidated VIEs of $978 million and $968 million at December 31, 2022 and 2021.

First-lien Mortgage Securitizations

As part of its mortgage banking activities, the Corporation securitizes a portion of the first-lien residential mortgage loans it originates or purchases from third parties, generally in the form of residential mortgage-backed securities (RMBS) guaranteed by government-sponsored enterprises, FNMA and FHLMC (collectively the GSEs), or the Government National Mortgage Association (GNMA) primarily in the case of FHA-insured and U.S. Department of Veterans Affairs (VA)-guaranteed mortgage loans. Securitization usually occurs in conjunction with or shortly after origination or purchase, and the Corporation may also securitize loans held in its residential mortgage portfolio. In addition, the Corporation may, from time to time, securitize commercial mortgages it originates or purchases from other entities. The Corporation typically services the loans it securitizes. Further, the Corporation may retain beneficial interests in the securitization trusts including senior and subordinate securities and equity tranches issued by the trusts. Except as described in *Note 12 – Commitments and Contingencies*, the Corporation does not provide guarantees or recourse to the securitization trusts other than standard representations and warranties.

The table below summarizes select information related to first-lien mortgage securitizations for 2022, 2021 and 2020.

First-lien Mortgage Securitizations

	Residential Mortgage - Agency			Commercial Mortgage		
(Dollars in millions)	**2022**	2021	2020	**2022**	2021	2020
Proceeds from loan sales [1]	**$ 8,084**	$ 6,664	$ 15,823	**$ 5,853**	$ 10,874	$ 5,084
Gains on securitizations [2]	**8**	9	728	**46**	156	61
Repurchases from securitization trusts [3]	**53**	756	436	**—**	—	—

[1] The Corporation transfers residential mortgage loans to securitizations sponsored primarily by the GSEs or GNMA in the normal course of business and primarily receives residential mortgage-backed securities in exchange. Substantially all of these securities are classified as Level 2 within the fair value hierarchy and are typically sold shortly after receipt.

[2] A majority of the first-lien residential mortgage loans securitized are initially classified as LHFS and accounted for under the fair value option. Gains recognized on these LHFS prior to securitization, which totaled $41 million, $121 million and $160 million net of hedges, during 2022, 2021 and 2020, respectively, are not included in the table above.

[3] The Corporation may have the option to repurchase delinquent loans out of securitization trusts, which reduces the amount of servicing advances it is required to make. The Corporation may also repurchase loans from securitization trusts to perform modifications. Repurchased loans include FHA-insured mortgages collateralizing GNMA securities.

The Corporation recognizes consumer MSRs from the sale or securitization of consumer real estate loans. The unpaid principal balance of loans serviced for investors, including residential mortgage and home equity loans, totaled $100.1 billion and $115.4 billion at December 31, 2022 and 2021. Servicing fee and ancillary fee income on serviced loans was $274 million, $392 million and $474 million during 2022, 2021 and 2020, respectively. Servicing advances on serviced loans, including loans serviced for others and loans held for investment, were $1.6 billion and $2.0 billion at December 31, 2022 and 2021. For more information on MSRs, see *Note 20 – Fair Value Measurements*.

During 2022, the Corporation deconsolidated agency residential mortgage securitization trusts with total assets of $784 million, with no significant deconsolidations in 2021.

During 2020, the Corporation completed the sale of $9.3 billion of consumer real estate loans through GNMA loan securitizations. As part of the securitizations, the Corporation retained $8.4 billion of MBS, which are classified as debt securities carried at fair value on the Consolidated Balance Sheet. Total gains on loan sales of $704 million were recorded in other income in the Consolidated Statement of Income.

The following table summarizes select information related to first-lien mortgage securitization trusts in which the Corporation held a variable interest at December 31, 2022 and 2021.

First-lien Mortgage VIEs

	Residential Mortgage								Commercial Mortgage	
	Agency		Non-agency Prime		Non-agency Subprime		Non-agency Alt-A			
	December 31									
(Dollars in millions)	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Unconsolidated VIEs										
Maximum loss exposure [1]	**$ 9,112**	$ 11,600	**$ 91**	$ 121	**$ 735**	$ 908	**$ 28**	$ 14	**$ 1,594**	$ 1,445
On-balance sheet assets										
Senior securities:										
Trading account assets	**$ 232**	$ 175	**$ 3**	$ 8	**$ 25**	$ 44	**$ 26**	$ 12	**$ 91**	$ 21
Debt securities carried at fair value	**3,027**	5,009	**—**	—	**410**	537	**—**	—	**—**	—
Held-to-maturity securities	**5,853**	6,416	**—**	—	**—**	—	**—**	—	**1,268**	1,157
All other assets	**—**	—	**3**	3	**25**	29	**2**	2	**101**	93
Total retained positions	**$ 9,112**	$ 11,600	**$ 6**	$ 11	**$ 460**	$ 610	**$ 28**	$ 14	**$ 1,460**	$ 1,271
Principal balance outstanding [2]	**$ 81,644**	$ 93,142	**$ 3,973**	$ 4,710	**$ 5,034**	$ 6,179	**$ 11,568**	$ 13,627	**$ 85,101**	$ 85,540
Consolidated VIEs										
Maximum loss exposure [1]	**$ 1,735**	$ 1,644	**$ —**	$ 49	**$ 78**	$ —	**$ —**	$ —	**$ —**	$ —
On-balance sheet assets										
Trading account assets	**$ 1,735**	$ 1,644	**$ —**	$ —	**$ 78**	$ —	**$ —**	$ —	**$ —**	$ —
Loans and leases, net	**—**	—	**—**	58	**—**	—	**—**	—	**—**	—
Total assets	**$ 1,735**	$ 1,644	**$ —**	$ 58	**$ 78**	$ —	**$ —**	$ —	**$ —**	$ —
Total liabilities	**$ —**	$ —	**$ —**	$ 9	**$ —**	$ —	**$ —**	$ —	**$ —**	$ —

[1] Maximum loss exposure includes obligations under loss-sharing reinsurance and other arrangements for non-agency residential mortgage and commercial mortgage securitizations, but excludes the reserve for representations and warranties obligations and corporate guarantees and also excludes servicing advances and other servicing rights and obligations. For more information, see *Note 12 – Commitments and Contingencies* and *Note 20 – Fair Value Measurements*.

[2] Principal balance outstanding includes loans where the Corporation was the transferor to securitization VIEs with which it has continuing involvement, which may include servicing the loans.

Other Asset-backed Securitizations

The table below summarizes select information related to home equity, credit card and other asset-backed VIEs in which the Corporation held a variable interest at December 31, 2022 and 2021.

Home Equity Loan, Credit Card and Other Asset-backed VIEs

	Home Equity [1]		Credit Card [2]		Resecuritization Trusts		Municipal Bond Trusts	
	December 31							
(Dollars in millions)	2022	2021	2022	2021	2022	2021	2022	2021
Unconsolidated VIEs								
Maximum loss exposure	**$ 119**	$ 152	**$ —**	$ —	**$ 4,243**	$ 6,089	**$ 2,537**	$ 4,094
On-balance sheet assets								
Securities [3]:								
Trading account assets	**$ —**	$ —	**$ —**	$ —	**$ 456**	$ 1,030	**$ —**	$ —
Debt securities carried at fair value	**1**	1	**—**	—	**1,259**	1,903	**—**	—
Held-to-maturity securities	**—**	—	**—**	—	**2,528**	3,156	**—**	—
Total retained positions	**$ 1**	$ 1	**$ —**	$ —	**$ 4,243**	$ 6,089	**$ —**	$ —
Total assets of VIEs	**$ 326**	$ 430	**$ —**	$ —	**$ 12,255**	$ 18,633	**$ 3,016**	$ 4,655
Consolidated VIEs								
Maximum loss exposure	**$ 32**	$ 45	**$ 9,555**	$ 10,279	**$ 551**	$ 680	**$ —**	$ 210
On-balance sheet assets								
Trading account assets	**$ —**	$ —	**$ —**	$ —	**$ 650**	$ 686	**$ —**	$ 122
Loans and leases	**97**	140	**14,555**	14,434	**—**	—	**—**	—
Allowance for loan and lease losses	**12**	14	**(808)**	(970)	**—**	—	**—**	—
All other assets	**2**	3	**68**	70	**—**	—	**—**	88
Total assets	**$ 111**	$ 157	**$ 13,815**	$ 13,534	**$ 650**	$ 686	**$ —**	$ 210
On-balance sheet liabilities								
Short-term borrowings	**$ —**	$ —	**$ —**	$ —	**$ —**	$ —	**$ —**	$ 196
Long-term debt	**79**	113	**4,247**	3,248	**99**	6	**—**	—
All other liabilities	**—**	—	**13**	7	**—**	—	**—**	—
Total liabilities	**$ 79**	$ 113	**$ 4,260**	$ 3,255	**$ 99**	$ 6	**$ —**	$ 196

[1] For unconsolidated home equity loan VIEs, the maximum loss exposure includes outstanding trust certificates issued by trusts in rapid amortization, net of recorded reserves. For both consolidated and unconsolidated home equity loan VIEs, the maximum loss exposure excludes the reserve for representations and warranties obligations and corporate guarantees. For more information, see *Note 12 – Commitments and Contingencies*.

[2] At December 31, 2022 and 2021, loans and leases in the consolidated credit card trust included $3.3 billion and $4.3 billion of seller's interest.

[3] The retained senior securities were valued using quoted market prices or observable market inputs (Level 2 of the fair value hierarchy).

Home Equity Loans

The Corporation retains interests, primarily senior securities, in home equity securitization trusts to which it transferred home equity loans. In addition, the Corporation may be obligated to provide subordinate funding to the trusts during a rapid amortization event. This obligation is included in the maximum loss exposure in the preceding table. The charges that will ultimately be recorded as a result of the rapid amortization events depend on the undrawn portion of the home equity lines of credit, performance of the loans, the amount of subsequent draws and the timing of related cash flows.

Credit Card Securitizations

The Corporation securitizes originated and purchased credit card loans. The Corporation's continuing involvement with the securitization trust includes servicing the receivables, retaining an undivided interest (seller's interest) in the receivables, and holding certain retained interests, including subordinate interests in accrued interest and fees on the securitized receivables and cash reserve accounts.

During 2022, 2021 and 2020, the Corporation issued new senior debt securities to third-party investors from the credit card securitization trust totaling $2.3 billion, $1.0 billion, and $1.0 billion, respectively.

At December 31, 2022 and 2021, the Corporation held subordinate securities issued by the credit card securitization trust with a notional principal amount of $6.7 billion and $6.5 billion. These securities serve as a form of credit enhancement to the senior debt securities and have a stated interest rate of zero percent. During 2022, 2021 and 2020, the credit card securitization trust issued $363 million, $161 million and $161 million, respectively, of these subordinate securities.

Resecuritization Trusts

The Corporation transfers securities, typically MBS, into resecuritization VIEs generally at the request of customers seeking securities with specific characteristics. Generally, there are no significant ongoing activities performed in a resecuritization trust, and no single investor has the unilateral ability to liquidate the trust.

The Corporation resecuritized $21.8 billion, $28.9 billion and $39.0 billion of securities during 2022, 2021 and 2020, respectively. Securities transferred into resecuritization VIEs were measured at fair value with changes in fair value recorded in market making and similar activities prior to the resecuritization and, accordingly, no gain or loss on sale was recorded. Securities received from the resecuritization VIEs were recognized at their fair value of $2.4 billion, $2.2 billion and $6.1 billion during 2022, 2021 and 2020, respectively. In 2022 and 2021, substantially all of the securities were classified as trading account assets. All of the securities received as resecuritization proceeds during 2020 were classified as trading account assets. Of the securities received as resecuritization proceeds during 2020, $2.4 billion, $2.1 billion and $1.7 billion were classified as trading account assets, debt securities carried at fair value and HTM securities, respectively. Substantially all of the trading account securities carried at fair value were categorized as Level 2 within the fair value hierarchy.

Municipal Bond Trusts

The Corporation administers municipal bond trusts that hold highly-rated, long-term, fixed-rate municipal bonds. The trusts obtain financing by issuing floating-rate trust certificates that reprice on a weekly or other short-term basis to third-party investors.

The Corporation's liquidity commitments to unconsolidated municipal bond trusts, including those for which the Corporation was transferor, totaled $2.5 billion and $4.1 billion at December 31, 2022 and 2021. The weighted-average remaining life of bonds held in the trusts at December 31, 2022 was 8.7 years. There were no significant write-downs or downgrades of assets or issuers during 2022, 2021 and 2020.

Other Variable Interest Entities

The table below summarizes select information related to other VIEs in which the Corporation held a variable interest at December 31, 2022 and 2021.

Other VIEs

(Dollars in millions)	Consolidated	Unconsolidated	Total	Consolidated	Unconsolidated	Total
	December 31, 2022			December 31, 2021		
Maximum loss exposure	**$ 2,286**	**$ 31,405**	**$ 33,691**	$ 4,819	$ 27,790	$ 32,609
On-balance sheet assets						
Trading account assets	**$ 353**	**$ 638**	**$ 991**	$ 2,552	$ 626	$ 3,178
Debt securities carried at fair value	**—**	**5**	**5**	—	7	7
Loans and leases	**2,086**	**90**	**2,176**	2,503	47	2,550
Allowance for loan and lease losses	**(1)**	**(12)**	**(13)**	(2)	(12)	(14)
All other assets	**46**	**30,221**	**30,267**	28	26,628	26,656
Total	**$ 2,484**	**$ 30,942**	**$ 33,426**	$ 5,081	$ 27,296	$ 32,377
On-balance sheet liabilities						
Short-term borrowings	**$ 42**	**$ —**	**$ 42**	$ 51	$ —	$ 51
Long-term debt	**156**	**—**	**156**	211	—	211
All other liabilities	**—**	**7,318**	**7,318**	—	6,548	6,548
Total	**$ 198**	**$ 7,318**	**$ 7,516**	$ 262	$ 6,548	$ 6,810
Total assets of VIEs	**$ 2,484**	**$ 101,271**	**$ 103,755**	$ 5,081	$ 92,249	$ 97,330

Customer VIEs

Customer VIEs include credit-linked, equity-linked and commodity-linked note VIEs, repackaging VIEs and asset acquisition VIEs, which are typically created on behalf of customers who wish to obtain market or credit exposure to a specific company, index, commodity or financial instrument.

The Corporation's maximum loss exposure to consolidated and unconsolidated customer VIEs totaled $914 million and $2.9 billion at December 31, 2022 and 2021, including the notional amount of derivatives to which the Corporation is a counterparty, net of losses previously recorded, and the Corporation's investment, if any, in securities issued by the VIEs.

Collateralized Debt Obligation VIEs

The Corporation receives fees for structuring CDO VIEs, which hold diversified pools of fixed-income securities, typically corporate debt or ABS, which the CDO VIEs fund by issuing multiple tranches of debt and equity securities. CDOs are generally managed by third-party portfolio managers. The Corporation typically transfers assets to these CDOs, holds securities issued by the CDOs and may be a derivative counterparty to the CDOs. The Corporation's maximum loss exposure to consolidated and unconsolidated CDOs totaled $197 million and $235 million at December 31, 2022 and 2021.

Investment VIEs

The Corporation sponsors, invests in or provides financing, which may be in connection with the sale of assets, to a variety of investment VIEs that hold loans, real estate, debt securities or other financial instruments and are designed to provide the desired investment profile to investors or the Corporation. At December 31, 2022 and 2021, the Corporation's consolidated investment VIEs had total assets of $854 million and $1.0 billion. The Corporation also held investments in unconsolidated VIEs with total assets of $12.2 billion and $7.1 billion at December 31, 2022 and 2021. The Corporation's maximum loss exposure associated with both consolidated and unconsolidated investment VIEs totaled $2.4 billion and $2.0 billion at December 31, 2022 and 2021 comprised primarily of on-balance sheet assets less non-recourse liabilities.

Leveraged Lease Trusts

The Corporation's net investment in consolidated leveraged lease trusts totaled $1.2 billion and $1.5 billion at December 31, 2022 and 2021. The trusts hold long-lived equipment such as rail cars, power generation and distribution equipment, and commercial aircraft. The Corporation structures the trusts and holds a significant residual interest. The net investment represents the Corporation's maximum loss exposure to the trusts in the unlikely event that the leveraged lease investments become worthless. Debt issued by the leveraged lease trusts is non-recourse to the Corporation.

Tax Credit VIEs

The Corporation holds investments in unconsolidated limited partnerships and similar entities that construct, own and operate affordable housing, wind and solar projects. An unrelated third party is typically the general partner or managing member and has control over the significant activities of the VIE. As an investor, tax credits associated with the investments in these entities are allocated to the Corporation, as provided by the U.S. Internal Revenue Code and related regulations, and are recognized as income tax benefits in the Corporation's Consolidated Statement of Income in the year they are earned, which varies based on the type of investments. Tax credits from environmental, social and governance (ESG) investments in affordable housing are recognized ratably over a term of up to 10 years, and tax credits from wind and solar energy investments are recognized either at inception for transactions electing Investment Tax Credits (ITCs) or as energy is produced for transactions electing Production Tax Credits (PTCs), which is generally up to a 10-year time period. The volume and types of investments held by the Corporation will influence the amount of tax credits recognized each period. The maximum loss exposure included in the Other VIEs table was $28.8 billion and $25.7 billion at December 31, 2022 and 2021. In addition to that amount, the Corporation had unfunded capital contributions for renewable energy investments of $1.9 billion and $1.0 billion at December 31, 2022 and 2021. The capital contributions are contingent on various conditions precedent to funding over the next two years. The Corporation's risk of loss is generally mitigated by policies requiring that the project qualify for the expected tax credits prior to making its investment.

The Corporation's investments in affordable housing partnerships, which are reported in other assets on the Consolidated Balance Sheet, totaled $14.1 billion and $12.6 billion, including unfunded commitments to provide capital contributions of $6.6 billion and $5.8 billion, at December 31, 2022 and 2021. The unfunded commitments are expected to be paid over the next five years. During 2022, 2021 and 2020, the Corporation recognized tax credits and other tax benefits of $1.5 billion, $1.3 billion and $1.2 billion and reported pretax losses in other income of $1.2 billion, $1.1 billion and $1.0 billion. These tax credits are recognized as part of the Corporation's annual effective tax rate used to determine tax expense in a given quarter. The Corporation may be asked to invest additional amounts to support a troubled affordable housing project. Such additional investments have not been and are not expected to be significant.

NOTE 7 Goodwill and Intangible Assets

Goodwill

The table below presents goodwill balances by business segment at December 31, 2022 and 2021. The reporting units utilized for goodwill impairment testing are the operating segments or one level below.

Goodwill

	December 31	
(Dollars in millions)	**2022**	2021
Consumer Banking	**$ 30,137**	$ 30,137
Global Wealth & Investment Management	**9,677**	9,677
Global Banking	**24,026**	24,026
Global Markets	**5,182**	5,182
Total goodwill	**$ 69,022**	$ 69,022

During 2022, the Corporation completed its annual goodwill impairment test as of June 30, 2022 using qualitative assessments for all applicable reporting units. Based on the results of the annual goodwill impairment test, the Corporation determined there was no impairment. For more information on the use of qualitative assessments, see *Note 1 – Summary of Significant Accounting Principles*.

Intangible Assets

At December 31, 2022 and 2021, the net carrying value of intangible assets was $2.1 billion and $2.2 billion. At both December 31, 2022 and 2021, intangible assets included $1.6

billion of intangible assets associated with trade names, substantially all of which had an indefinite life and, accordingly, are not being amortized. Amortization of intangibles expense was $78 million, $76 million and $95 million for 2022, 2021 and 2020.

NOTE 8 Leases

The Corporation enters into both lessor and lessee arrangements. For more information on lease accounting, see *Note 1 – Summary of Significant Accounting Principles* and on lease financing receivables, see *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses*.

Lessor Arrangements

The Corporation's lessor arrangements primarily consist of operating, sales-type and direct financing leases for equipment. Lease agreements may include options to renew and for the lessee to purchase the leased equipment at the end of the lease term.

The table below presents the net investment in sales-type and direct financing leases at December 31, 2022 and 2021.

Net Investment [1]

	December 31	
(Dollars in millions)	**2022**	2021
Lease receivables	**$ 15,123**	$ 16,806
Unguaranteed residuals	**2,143**	2,078
Total net investment in sales-type and direct financing leases	**$ 17,266**	$ 18,884

(1) In certain cases, the Corporation obtains third-party residual value insurance to reduce its residual asset risk. The carrying value of residual assets with third-party residual value insurance for at least a portion of the asset value was $6.5 billion and $7.1 billion at December 31, 2022 and 2021.

The table below presents lease income for 2022, 2021 and 2020.

Lease Income

(Dollars in millions)	**2022**	2021	2020
Sales-type and direct financing leases	**$ 589**	$ 613	$ 707
Operating leases	**941**	930	931
Total lease income	**$ 1,530**	$ 1,543	$ 1,638

Lessee Arrangements

The Corporation's lessee arrangements predominantly consist of operating leases for premises and equipment; the Corporation's financing leases are not significant.

Lease terms may contain renewal and extension options and early termination features. Generally, these options do not impact the lease term because the Corporation is not reasonably certain that it will exercise the options.

The following table provides information on the right-of-use assets, lease liabilities and weighted-average discount rates and lease terms at December 31, 2022 and 2021.

Supplemental Information for Lessee Arrangements

	December 31	
(Dollars in millions)	**2022**	2021
Right-of-use asset	**$ 9,755**	$ 10,233
Lease liabilities	**10,359**	10,858
Weighted-average discount rate used to calculate present value of future minimum lease payments	**3.25 %**	2.91 %
Weighted-average lease term (in years)	**8.6**	9.0
Right-of-use assets obtained in exchange for new operating lease liabilities [1]	**$ 824**	$ 1,713

	2022	2021	2020
Operating cash flows from operating leases [2]	**$ 1,986**	$ 1,964	$ 2,039
Lease Cost and Supplemental Information:			
Operating lease cost	**$ 2,008**	$ 2,025	$ 2,149
Variable lease cost [3]	**464**	462	474
Total lease cost [4]	**$ 2,472**	$ 2,487	$ 2,623

(1) Represents non-cash activity and, accordingly, is not reflected in the Consolidated Statement of Cash Flows.
(2) Represents cash paid for amounts included in the measurements of lease liabilities.
(3) Primarily consists of payments for common area maintenance and property taxes.
(4) Amounts are recorded in occupancy and equipment expense in the Consolidated Statement of Income.

Maturity Analysis

The maturities of lessor and lessee arrangements outstanding at December 31, 2022 are presented in the table below based on undiscounted cash flows.

Maturities of Lessor and Lessee Arrangements

	Lessor		Lessee [1]
	Operating Leases	**Sales-type and Direct Financing Leases** [2]	**Operating Leases**
(Dollars in millions)	**December 31, 2022**		
2023	$ 819	$ 4,932	$ 1,998
2024	682	4,399	1,850
2025	509	2,539	1,567
2026	368	1,993	1,354
2027	289	990	1,131
Thereafter	664	1,635	4,189
Total undiscounted cash flows	$ 3,331	16,488	12,089
Less: Net present value adjustment		1,365	1,730
Total [3]		**$ 15,123**	**$ 10,359**

(1) Excludes $278 million in commitments under lessee arrangements that have not yet commenced with lease terms that will begin in 2023.
(2) Includes $10.2 billion in commercial lease financing receivables and $4.9 billion in direct/indirect consumer lease financing receivables.
(3) Represents lease receivables for lessor arrangements and lease liabilities for lessee arrangements.

NOTE 9 Deposits

The scheduled contractual maturities for total time deposits at December 31, 2022 are presented in the table below.

Contractual Maturities of Total Time Deposits

(Dollars in millions)	U.S.	Non-U.S.	Total
Due in 2023	$ 36,114	$ 7,393	**$ 43,507**
Due in 2024	3,576	67	**3,643**
Due in 2025	643	6	**649**
Due in 2026	149	23	**172**
Due in 2027	116	1,472	**1,588**
Thereafter	238	8	**246**
Total time deposits	$ 40,836	$ 8,969	**$ 49,805**

At December 31, 2022 and 2021, the Corporation had aggregate U.S. time deposits of $12.8 billion and $9.4 billion and non-U.S. time deposits of $9.0 billion and $10.6 billion in denominations that met or exceeded insurance limits.

NOTE 10 Securities Financing Agreements, Short-term Borrowings, Collateral and Restricted Cash

The Corporation enters into securities financing agreements which include securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase. These financing agreements (also referred to as "matched-book transactions") are to accommodate customers, obtain securities to cover short positions and finance inventory positions. The Corporation elects to account for certain securities financing agreements under the fair value option. For more information on the fair value option, see *Note 21 – Fair Value Option*.

Offsetting of Securities Financing Agreements

Substantially all of the Corporation's securities financing activities are transacted under legally enforceable master repurchase agreements or legally enforceable master securities lending agreements that give the Corporation, in the event of default by the counterparty, the right to liquidate securities held and to offset receivables and payables with the same counterparty. The Corporation offsets securities financing transactions with the same counterparty on the Consolidated Balance Sheet where it has such a legally enforceable master netting agreement and the transactions have the same maturity date.

The Securities Financing Agreements table presents securities financing agreements included on the Consolidated Balance Sheet in federal funds sold and securities borrowed or purchased under agreements to resell, and in federal funds purchased and securities loaned or sold under agreements to repurchase at December 31, 2022 and 2021. Balances are presented on a gross basis, prior to the application of counterparty netting. Gross assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements. For more information on the offsetting of derivatives, see *Note 3 – Derivatives.*

Securities Financing Agreements

(Dollars in millions)	Gross Assets/ Liabilities [1]	Amounts Offset	Net Balance Sheet Amount	Financial Instruments [2]	Net Assets/ Liabilities
			December 31, 2022		
Securities borrowed or purchased under agreements to resell [3]	**$ 597,847**	**$ (330,273)**	**$ 267,574**	**$ (240,120)**	**$ 27,454**
Securities loaned or sold under agreements to repurchase	**$ 525,908**	**$ (330,273)**	**$ 195,635**	**$ (183,265)**	**$ 12,370**
Other [4]	**8,427**	**—**	**8,427**	**(8,427)**	**—**
Total	**$ 534,335**	**$ (330,273)**	**$ 204,062**	**$ (191,692)**	**$ 12,370**
			December 31, 2021		
Securities borrowed or purchased under agreements to resell [3]	$ 527,054	$ (276,334)	$ 250,720	$ (229,525)	$ 21,195
Securities loaned or sold under agreements to repurchase	$ 468,663	$ (276,334)	$ 192,329	$ (181,860)	$ 10,469
Other [4]	11,391	—	11,391	(11,391)	—
Total	$ 480,054	$ (276,334)	$ 203,720	$ (193,251)	$ 10,469

(1) Includes activity where uncertainty exists as to the enforceability of certain master netting agreements under bankruptcy laws in some countries or industries.

(2) Includes securities collateral received or pledged under repurchase or securities lending agreements where there is a legally enforceable master netting agreement. These amounts are not offset on the Consolidated Balance Sheet, but are shown as a reduction to derive a net asset or liability. Securities collateral received or pledged where the legal enforceability of the master netting agreements is uncertain is excluded from the table.

(3) Excludes repurchase activity of $8.7 billion and $20.1 billion reported in loans and leases on the Consolidated Balance Sheet at December 31, 2022 and 2021.

(4) Balance is reported in accrued expenses and other liabilities on the Consolidated Balance Sheet and relates to transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged as collateral or sold. In these transactions, the Corporation recognizes an asset at fair value, representing the securities received, and a liability, representing the obligation to return those securities.

Repurchase Agreements and Securities Loaned Transactions Accounted for as Secured Borrowings

The following tables present securities sold under agreements to repurchase and securities loaned by remaining contractual term to maturity and class of collateral pledged. Included in "Other" are transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged as collateral or sold. Certain agreements contain a right to substitute collateral and/or terminate the agreement prior to maturity at the option of the Corporation or the counterparty. Such agreements are included in the table below based on the remaining contractual term to maturity.

Remaining Contractual Maturity

(Dollars in millions)	Overnight and Continuous	30 Days or Less	After 30 Days Through 90 Days	Greater than 90 Days [1]	Total
			December 31, 2022		
Securities sold under agreements to repurchase	$ 200,087	$ 181,632	$ 41,666	$ 30,107	$ 453,492
Securities loaned	66,909	288	1,139	4,080	72,416
Other	8,427	—	—	—	8,427
Total	$ 275,423	$ 181,920	$ 42,805	$ 34,187	$ 534,335
			December 31, 2021		
Securities sold under agreements to repurchase	$ 148,023	$ 194,964	$ 36,939	$ 36,501	$ 416,427
Securities loaned	46,231	466	1,428	4,111	52,236
Other	11,391	—	—	—	11,391
Total	$ 205,645	$ 195,430	$ 38,367	$ 40,612	$ 480,054

[1] No agreements have maturities greater than four years.

Class of Collateral Pledged

(Dollars in millions)	Securities Sold Under Agreements to Repurchase	Securities Loaned	Other	Total
		December 31, 2022		
U.S. government and agency securities	$ 193,005	$ 18	$ —	$ 193,023
Corporate securities, trading loans and other	14,345	2,896	317	17,558
Equity securities	10,249	69,432	8,110	87,791
Non-U.S. sovereign debt	232,171	70	—	232,241
Mortgage trading loans and ABS	3,722	—	—	3,722
Total	$ 453,492	$ 72,416	$ 8,427	$ 534,335
		December 31, 2021		
U.S. government and agency securities	$ 201,546	$ 27	$ —	$ 201,573
Corporate securities, trading loans and other	12,838	3,440	1,148	17,426
Equity securities	19,907	48,650	10,192	78,749
Non-U.S. sovereign debt	178,019	119	51	178,189
Mortgage trading loans and ABS	4,117	—	—	4,117
Total	$ 416,427	$ 52,236	$ 11,391	$ 480,054

Under repurchase agreements, the Corporation is required to post collateral with a market value equal to or in excess of the principal amount borrowed. For securities loaned transactions, the Corporation receives collateral in the form of cash, letters of credit or other securities. To determine whether the market value of the underlying collateral remains sufficient, collateral is generally valued daily, and the Corporation may be required to deposit additional collateral or may receive or return collateral pledged when appropriate. Repurchase agreements and securities loaned transactions are generally either overnight, continuous (i.e., no stated term) or short-term. The Corporation manages liquidity risks related to these agreements by sourcing funding from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate.

Short-term Bank Notes

Bank of America, N.A. maintains a global program to offer up to a maximum of $75.0 billion outstanding at any one time, of bank notes with fixed or floating rates and maturities of at least seven days from the date of issue. Short-term bank notes outstanding under this program totaled $6.2 billion and $1.8 billion at December 31, 2022 and 2021. These short-term bank notes, along with Federal Home Loan Bank advances, U.S. Treasury tax and loan notes, and term federal funds purchased, are included in short-term borrowings on the Consolidated Balance Sheet.

Collateral

The Corporation accepts securities and loans as collateral that it is permitted by contract or practice to sell or repledge. At December 31, 2022 and 2021, the fair value of this collateral was $827.6 billion and $854.8 billion, of which $764.1 billion and $782.7 billion were sold or repledged. The primary source of this collateral is securities borrowed or purchased under agreements to resell.

The Corporation also pledges company-owned securities and loans as collateral in transactions that include repurchase agreements, securities loaned, public and trust deposits, U.S. Treasury tax and loan notes, and short-term borrowings. This collateral, which in some cases can be sold or repledged by the counterparties to the transactions, is parenthetically disclosed on the Consolidated Balance Sheet.

In certain cases, the Corporation has transferred assets to consolidated VIEs where those restricted assets serve as collateral for the interests issued by the VIEs. These assets are included on the Consolidated Balance Sheet in Assets of Consolidated VIEs.

In addition, the Corporation obtains collateral in connection with its derivative contracts. Required collateral levels vary depending on the credit risk rating and the type of counterparty. Generally, the Corporation accepts collateral in the form of cash, U.S. Treasury securities and other marketable securities. Based on provisions contained in master netting agreements, the Corporation nets cash collateral received against derivative assets. The Corporation also pledges collateral on its own derivative positions which can be applied against derivative liabilities. For more information on the collateral of derivatives, see *Note 3 – Derivatives.*

Restricted Cash

At December 31, 2022 and 2021, the Corporation held restricted cash included within cash and cash equivalents on the Consolidated Balance Sheet of $7.6 billion and $5.9 billion, predominantly related to cash segregated in compliance with securities regulations and cash held on deposit with central banks to meet reserve requirements.

NOTE 11 Long-term Debt

Long-term debt consists of borrowings having an original maturity of one year or more. The table below presents the balance of long-term debt at December 31, 2022 and 2021, and the related contractual rates and maturity dates as of December 31, 2022.

(Dollars in millions)	Weighted-average Rate	Interest Rates	Maturity Dates	December 31 2022	2021
Notes issued by Bank of America Corporation [1]					
Senior notes:					
Fixed	**3.03 %**	**0.25 - 8.05 %**	**2023 - 2052**	**$ 188,429**	$ 194,191
Floating	**4.2**	**0.74 - 9.16**	**2023 - 2044**	**17,469**	18,753
Senior structured notes				**11,608**	15,086
Subordinated notes:					
Fixed	**4.88**	**2.94 - 8.57**	**2024 - 2045**	**21,098**	22,311
Floating	**3.45**	**2.48 - 5.53**	**2026 - 2037**	**4,544**	2,371
Junior subordinated notes:					
Fixed	**6.71**	**6.45 - 8.05**	**2027 - 2066**	**743**	741
Floating	**5.56**	**5.56**	**2056**	**1**	1
Total notes issued by Bank of America Corporation				**243,892**	253,454
Notes issued by Bank of America, N.A.					
Senior notes:					
Fixed				**—**	501
Floating	**5.05**	**5.05**	**2024**	**2,600**	3,173
Subordinated notes	**6.00**	**6.00**	**2036**	**1,485**	1,780
Advances from Federal Home Loan Banks:					
Fixed	**4.49**	**0.01 - 7.42**	**2023 - 2034**	**681**	290
Securitizations and other BANA VIEs [2]				**4,300**	3,338
Other				**908**	680
Total notes issued by Bank of America, N.A.				**9,974**	9,762
Other debt					
Structured liabilities [3]				**21,835**	16,599
Nonbank VIEs [2]				**281**	249
Other				**—**	53
Total notes issued by nonbank and other entities				**22,116**	16,901
Total long-term debt				**$ 275,982**	$ 280,117

(1) Includes total loss-absorbing capacity compliant debt.
(2) Represents liabilities of consolidated VIEs included in total long-term debt on the Consolidated Balance Sheet. Long-term debt of VIEs is collateralized by the assets of the VIEs. At December 31, 2022, amount includes debt predominantly from credit card securitization and other VIEs of $4.2 billion and $156 million. For more information, see *Note 6 – Securitizations and Other Variable Interest Entities.*
(3) Includes debt outstanding of $8.0 billion and $5.4 billion at December 31, 2022 and 2021 that was issued by BofA Finance LLC, a consolidated finance subsidiary of Bank of America Corporation, the parent company, and is fully and unconditionally guaranteed by the parent company.

During 2022, the Corporation issued $66.0 billion of long-term debt consisting of $44.2 billion of notes issued by Bank of America Corporation, $10.0 billion of notes issued by Bank of America, N.A. and $11.8 billion of other debt. During 2021, the Corporation issued $76.7 billion of long-term debt consisting of $56.2 billion of notes issued by Bank of America Corporation, $8.0 billion of notes issued by Bank of America, N.A. and $12.5 billion of other debt.

During 2022, the Corporation had total long-term debt maturities and redemptions in the aggregate of $33.3 billion consisting of $19.8 billion for Bank of America Corporation, $9.9 billion for Bank of America, N.A. and $3.6 billion of other debt. During 2021, the Corporation had total long-term debt maturities and redemptions in the aggregate of $46.4 billion consisting of $24.4 billion for Bank of America Corporation, $10.4 billion for Bank of America, N.A. and $11.6 billion of other debt.

Bank of America Corporation and Bank of America, N.A. maintain various U.S. and non-U.S. debt programs to offer both senior and subordinated notes. The notes may be denominated in U.S. dollars or foreign currencies. At December 31, 2022 and 2021, the amount of foreign currency-denominated debt translated into U.S. dollars included in total long-term debt was $46.7 billion and $53.1 billion. Foreign currency contracts may be used to convert certain foreign currency-denominated debt into U.S. dollars.

The weighted-average effective interest rates for total long-term debt (excluding senior structured notes), total fixed-rate debt and total floating-rate debt were 3.27 percent, 3.23 percent and 4.14 percent, respectively, at December 31, 2022, and 2.83 percent, 3.08 percent and 0.75 percent, respectively, at December 31, 2021. The Corporation's ALM activities maintain an overall interest rate risk management strategy that incorporates the use of interest rate contracts to manage fluctuations in earnings caused by interest rate volatility. The

Corporation's goal is to manage interest rate sensitivity so that movements in interest rates do not have a significantly adverse effect on earnings and capital. The weighted-average rates are the contractual interest rates on the debt and do not reflect the impacts of derivative transactions.

The table below shows the carrying value for aggregate annual contractual maturities of long-term debt as of December 31, 2022. Included in the table are certain structured notes issued by the Corporation that contain provisions whereby the borrowings are redeemable at the option of the holder (put options) at specified dates prior to maturity. Other structured notes have coupon or repayment terms linked to the performance of debt or equity securities, indices, currencies or commodities, and the maturity may be accelerated based on the value of a referenced index or security. In both cases, the Corporation or a subsidiary may be required to settle the obligation for cash or other securities prior to the contractual maturity date. These borrowings are reflected in the table as maturing at their contractual maturity date.

Long-term Debt by Maturity

(Dollars in millions)	2023	2024	2025	2026	2027	Thereafter	Total
Bank of America Corporation							
Senior notes	$ 8,029	$ 22,570	$ 24,730	$ 23,972	$ 16,055	$ 110,542	**$ 205,898**
Senior structured notes	767	456	558	946	641	8,240	**11,608**
Subordinated notes	—	3,205	5,132	4,908	2,155	10,242	**25,642**
Junior subordinated notes	—	—	—	—	188	556	**744**
Total Bank of America Corporation	8,796	26,231	30,420	29,826	19,039	129,580	**243,892**
Bank of America, N.A.							
Senior notes	—	2,600	—	—	—	—	**2,600**
Subordinated notes	—	—	—	—	—	1,485	**1,485**
Advances from Federal Home Loan Banks	600	—	15	9	4	53	**681**
Securitizations and other Bank VIEs [1]	1,000	1,000	2,248	—	—	52	**4,300**
Other	642	89	71	45	63	(2)	**908**
Total Bank of America, N.A.	2,242	3,689	2,334	54	67	1,588	**9,974**
Other debt							
Structured Liabilities	5,253	2,426	2,482	1,474	2,001	8,199	**21,835**
Nonbank VIEs [1]	—	—	—	—	—	281	**281**
Other	—	—	—	—	—	—	**—**
Total other debt	5,253	2,426	2,482	1,474	2,001	8,480	**22,116**
Total long-term debt	**$ 16,291**	**$ 32,346**	**$ 35,236**	**$ 31,354**	**$ 21,107**	**$ 139,648**	**$ 275,982**

[1] Represents liabilities of consolidated VIEs included in total long-term debt on the Consolidated Balance Sheet.

NOTE 12 Commitments and Contingencies

In the normal course of business, the Corporation enters into a number of off-balance sheet commitments. These commitments expose the Corporation to varying degrees of credit and market risk and are subject to the same credit and market risk limitation reviews as those instruments recorded on the Consolidated Balance Sheet.

Credit Extension Commitments

The Corporation enters into commitments to extend credit such as loan commitments, SBLCs and commercial letters of credit to meet the financing needs of its customers. The following table includes the notional amount of unfunded legally binding lending commitments net of amounts distributed (i.e., syndicated or participated) to other financial institutions. The distributed amounts were $10.4 billion and $10.7 billion at December 31, 2022 and 2021. The carrying value of the Corporation's credit extension commitments at December 31, 2022 and 2021, excluding commitments accounted for under the fair value option, was $1.6 billion and $1.5 billion, which predominantly related to the reserve for unfunded lending commitments. The carrying value of these commitments is classified in accrued expenses and other liabilities on the Consolidated Balance Sheet.

Legally binding commitments to extend credit generally have specified rates and maturities. Certain of these commitments have adverse change clauses that help to protect the Corporation against deterioration in the borrower's ability to pay.

The following table includes the notional amount of commitments of $3.0 billion and $4.8 billion at December 31, 2022 and 2021 that are accounted for under the fair value option. However, the table excludes the cumulative net fair value for these commitments of $110 million and $97 million at December 31, 2022 and 2021, which is classified in accrued expenses and other liabilities. For more information regarding the Corporation's loan commitments accounted for under the fair value option, see *Note 21 – Fair Value Option.*

Credit Extension Commitments

(Dollars in millions)	Expire in One Year or Less	Expire After One Year Through Three Years	Expire After Three Years Through Five Years	Expire After Five Years	Total
	December 31, 2022				
Notional amount of credit extension commitments					
Loan commitments [1]	$ 113,962	$ 162,890	$ 221,374	$ 13,667	$ 511,893
Home equity lines of credit	1,479	7,230	11,578	22,154	42,441
Standby letters of credit and financial guarantees [2]	22,565	9,237	2,787	628	35,217
Letters of credit	853	46	52	49	1,000
Other commitments [3]	5	93	71	1,103	1,272
Legally binding commitments	138,864	179,496	235,862	37,601	591,823
Credit card lines [4]	419,144	—	—	—	419,144
Total credit extension commitments	$ 558,008	$ 179,496	$ 235,862	$ 37,601	$ 1,010,967
	December 31, 2021				
Notional amount of credit extension commitments					
Loan commitments [1]	$ 102,464	$ 190,687	$ 174,978	$ 26,635	$ 494,764
Home equity lines of credit	890	5,097	10,268	24,276	40,531
Standby letters of credit and financial guarantees [2]	22,359	10,742	2,017	422	35,540
Letters of credit	1,145	124	56	98	1,423
Other commitments [3]	18	59	81	1,233	1,391
Legally binding commitments	126,876	206,709	187,400	52,664	573,649
Credit card lines [4]	406,169	—	—	—	406,169
Total credit extension commitments	$ 533,045	$ 206,709	$ 187,400	$ 52,664	$ 979,818

[1] At December 31, 2022 and 2021, $2.6 billion and $4.6 billion of these loan commitments were held in the form of a security.
[2] The notional amounts of SBLCs and financial guarantees classified as investment grade and non-investment grade based on the credit quality of the underlying reference name within the instrument were $25.1 billion and $9.5 billion at December 31, 2022, and $26.3 billion and $8.7 billion at December 31, 2021. Amounts in the table include consumer SBLCs of $575 million and $512 million at December 31, 2022 and 2021.
[3] Primarily includes second-loss positions on lease-end residual value guarantees.
[4] Includes business card unused lines of credit.

Other Commitments

At December 31, 2022 and 2021, the Corporation had commitments to purchase loans (e.g., residential mortgage and commercial real estate) of $636 million and $181 million, which upon settlement will be included in trading account assets, loans or LHFS, and commitments to purchase commercial loans of $294 million and $518 million, which upon settlement will be included in trading account assets.

At December 31, 2022 and 2021, the Corporation had commitments to purchase commodities, primarily liquefied natural gas, of $0 and $949 million, which upon settlement will be included in trading account assets.

At both December 31, 2022 and 2021, the Corporation had commitments to enter into resale and forward-dated resale and securities borrowing agreements of $92.0 billion, and commitments to enter into forward-dated repurchase and securities lending agreements of $57.8 billion and $32.6 billion as of both period ends. These commitments generally expire within the next 12 months.

At December 31, 2022 and 2021, the Corporation had a commitment to originate or purchase up to $3.7 billion and $4.0 billion on a rolling 12-month basis, of auto loans and leases from a strategic partner. This commitment extends through November 2026 and can be terminated with 12 months prior notice.

At December 31, 2022 and 2021, the Corporation had unfunded equity investment commitments of $571 million and $395 million.

Other Guarantees

Bank-owned Life Insurance Book Value Protection

The Corporation sells products that offer book value protection to insurance carriers who offer group life insurance policies to corporations, primarily banks. At December 31, 2022 and 2021, the notional amount of these guarantees totaled $4.3 billion and $6.3 billion. At December 31, 2022 and 2021, the Corporation's maximum exposure related to these guarantees totaled $632 million and $928 million, with estimated maturity dates between 2033 and 2039.

Indemnifications

In the ordinary course of business, the Corporation enters into various agreements that contain indemnifications, such as tax indemnifications, whereupon payment may become due if certain external events occur, such as a change in tax law. The indemnification clauses are often standard contractual terms and were entered into in the normal course of business based on an assessment that the risk of loss would be remote. These agreements typically contain an early termination clause that permits the Corporation to exit the agreement upon these events. The maximum potential future payment under indemnification agreements is difficult to assess for several reasons, including the occurrence of an external event, the inability to predict future changes in tax and other laws, the difficulty in determining how such laws would apply to parties in contracts, the absence of exposure limits contained in standard contract language and the timing of any early termination clauses. Historically, any payments made under these guarantees have been de minimis. The Corporation has assessed the probability of making such payments in the future as remote.

Merchant Services

The Corporation in its role as merchant acquirer or as a sponsor of other merchant acquirers may be held liable for any reversed charges that cannot be collected from the merchants, due to, among other things, merchant fraud or insolvency. If charges are properly reversed after a purchase and cannot be collected from either the merchants or merchant acquirers, the Corporation may be held liable for these reversed charges. The ability to reverse a charge is primarily governed by the applicable

payment network rules and regulations, which include, but are not limited to, the type of charge, type of payment used and time limits. The total amount of transactions subject to reversal under payment network rules and regulations processed for the preceding six-month period, which was approximately $501 billion, is an estimate of the Corporation's maximum potential exposure as of December 31, 2022. The Corporation's risk in this area primarily relates to circumstances where a cardholder has purchased goods or services for future delivery. The Corporation mitigates this risk by requiring cash deposits, guarantees, letters of credit or other types of collateral from certain merchants. The Corporation's reserves for contingent losses and the losses incurred related to the merchant processing activity were not significant.

Exchange and Clearing House Member Guarantees

The Corporation is a member of various securities and derivative exchanges and clearinghouses, both in the U.S. and other countries. As a member, the Corporation may be required to pay a pro-rata share of the losses incurred by some of these organizations as a result of another member default and under other loss scenarios. The Corporation's potential obligations may be limited to its membership interests in such exchanges and clearinghouses, to the amount (or multiple) of the Corporation's contribution to the guarantee fund or, in limited instances, to the full pro-rata share of the residual losses after applying the guarantee fund. The Corporation's maximum potential exposure under these membership agreements is difficult to estimate; however, the Corporation has assessed the probability of making any such payments as remote.

Prime Brokerage and Securities Clearing Services

In connection with its prime brokerage and clearing businesses, the Corporation performs securities clearance and settlement services with other brokerage firms and clearinghouses on behalf of its clients. Under these arrangements, the Corporation stands ready to meet the obligations of its clients with respect to securities transactions. The Corporation's obligations in this respect are secured by the assets in the clients' accounts and the accounts of their customers as well as by any proceeds received from the transactions cleared and settled by the Corporation on behalf of clients or their customers. The Corporation's maximum potential exposure under these arrangements is difficult to estimate; however, the potential for the Corporation to incur material losses pursuant to these arrangements is remote.

Fixed Income Clearing Corporation Sponsored Member Repo Program

The Corporation acts as a sponsoring member in a repo program whereby the Corporation clears certain eligible resale and repurchase agreements through the Government Securities Division of the Fixed Income Clearing Corporation on behalf of clients that are sponsored members in accordance with the Fixed Income Clearing Corporation's rules. As part of this program, the Corporation guarantees the payment and performance of its sponsored members to the Fixed Income Clearing Corporation. The Corporation's guarantee obligation is secured by a security interest in cash or high-quality securities collateral placed by clients with the clearinghouse and therefore, the potential for the Corporation to incur significant losses under this arrangement is remote. The Corporation's maximum potential exposure, without taking into consideration the related collateral, was $59.6 billion and $42.0 billion at December 31, 2022 and 2021.

Other Guarantees

In the normal course of business, the Corporation periodically guarantees the obligations of its affiliates in a variety of transactions including ISDA-related transactions and non-ISDA related transactions such as commodities trading, repurchase agreements, prime brokerage agreements and other transactions.

Guarantees of Certain Long-term Debt

The Corporation, as the parent company, fully and unconditionally guarantees the securities issued by BofA Finance LLC, a consolidated finance subsidiary of the Corporation, and effectively provides for the full and unconditional guarantee of trust securities issued by certain statutory trust companies that are 100 percent owned finance subsidiaries of the Corporation.

Representations and Warranties Obligations and Corporate Guarantees

The Corporation securitizes first-lien residential mortgage loans generally in the form of RMBS guaranteed by the GSEs or by GNMA in the case of FHA-insured, VA-guaranteed and Rural Housing Service-guaranteed mortgage loans, and sells pools of first-lien residential mortgage loans in the form of whole loans. In addition, in prior years, legacy companies and certain subsidiaries sold pools of first-lien residential mortgage loans and home equity loans as private-label securitizations or in the form of whole loans. In connection with these transactions, the Corporation or certain of its subsidiaries or legacy companies make and have made various representations and warranties. Breaches of these representations and warranties have resulted in and may continue to result in the requirement to repurchase mortgage loans or to otherwise make whole or provide indemnification or other remedies to sponsors, investors, securitization trusts, guarantors, insurers or other parties (collectively, repurchases).

Unresolved Repurchase Claims

Unresolved representations and warranties repurchase claims represent the notional amount of repurchase claims made by counterparties, typically the outstanding principal balance or the unpaid principal balance at the time of default. In the case of first-lien mortgages, the claim amount is often significantly greater than the expected loss amount due to the benefit of collateral and, in some cases, mortgage insurance or mortgage guarantee payments.

The notional amount of unresolved repurchase claims at December 31, 2022 and 2021 was $5.5 billion and $8.4 billion. These balances included $2.2 billion and $2.8 billion at December 31, 2022 and 2021 of claims related to loans in specific private-label securitization groups or tranches where the Corporation owns substantially all of the outstanding securities or will otherwise realize the benefit of any repurchase claims paid.

During 2022, the Corporation received $82 million in new repurchase claims that were not time-barred. During 2022, $3.0 billion in claims were resolved.

Reserve and Related Provision

The reserve for representations and warranties obligations and corporate guarantees was $612 million and $1.2 billion at December 31, 2022 and 2021 and is included in accrued expenses and other liabilities on the Consolidated Balance Sheet, and the related provision is included in other income in the Consolidated Statement of Income. The representations and warranties reserve represents the Corporation's best estimate

of probable incurred losses, is based on its experience in previous negotiations, and is subject to judgment, a variety of assumptions, and known or unknown uncertainties. Future representations and warranties losses may occur in excess of the amounts recorded for these exposures; however, the Corporation does not expect such amounts to be material to the Corporation's financial condition and liquidity. See Litigation and Regulatory Matters below for the Corporation's combined range of possible loss in excess of the reserve for representations and warranties and the accrued liability for litigation.

Litigation and Regulatory Matters

In the ordinary course of business, the Corporation and its subsidiaries are routinely defendants in or parties to many pending and threatened legal, regulatory and governmental actions and proceedings. In view of the inherent difficulty of predicting the outcome of such matters, particularly where the claimants seek very large or indeterminate damages or where the matters present novel legal theories or involve a large number of parties, the Corporation generally cannot predict the eventual outcome of the pending matters, timing of the ultimate resolution of these matters, or eventual loss, fines or penalties related to each pending matter.

As a matter develops, the Corporation, in conjunction with any outside counsel handling the matter, evaluates whether such matter presents a loss contingency that is probable and estimable, and, for the matters below, whether a loss in excess of any accrued liability is reasonably possible in future periods. Once the loss contingency is deemed to be both probable and estimable, the Corporation will establish an accrued liability and record a corresponding amount of expense. The Corporation continues to monitor the matter for further developments that could affect the amount of the accrued liability that has been previously established. Excluding expenses of internal and external legal service providers, litigation and regulatory investigation-related expense of $1.2 billion and $164 million was recognized in 2022 and 2021.

For any matter disclosed in this Note for which a loss in future periods is reasonably possible and estimable (whether in excess of an accrued liability or where there is no accrued liability) and for representations and warranties exposures, the Corporation's estimated range of possible loss is $0 to $0.8 billion in excess of the accrued liability, if any, as of December 31, 2022.

The accrued liability and estimated range of possible loss are based upon currently available information and subject to significant judgment, a variety of assumptions and known and unknown uncertainties. The matters underlying the accrued liability and estimated range of possible loss are unpredictable and may change from time to time, and actual losses may vary significantly from the current estimate and accrual. The estimated range of possible loss does not represent the Corporation's maximum loss exposure.

Information is provided below regarding the nature of the litigation and, where specified, associated claimed damages. Based on current knowledge, and taking into account accrued liabilities, management does not believe that loss contingencies arising from pending matters, including the matters described below, will have a material adverse effect on the consolidated financial condition or liquidity of the Corporation. However, in light of the significant judgment, variety of assumptions and uncertainties involved in those matters, some of which are beyond the Corporation's control, and the very large or indeterminate damages sought in some of those matters, an adverse outcome in one or more of those matters could be material to the Corporation's business or results of operations for any particular reporting period, or cause significant reputational harm.

Deposit Insurance Assessment

On January 9, 2017, the Federal Deposit Insurance Corporation (FDIC) filed suit against BANA in the U.S. District Court for the District of Columbia ("District Court") alleging failure to pay a December 15, 2016 invoice for additional deposit insurance assessments and interest in the amount of $542 million for the quarters ending June 30, 2013 through December 31, 2014.

On April 7, 2017, the FDIC amended its complaint to add a claim for additional deposit insurance and interest in the amount of $583 million for the quarters ending March 31, 2012 through March 31, 2013. The FDIC asserts these claims based on BANA's alleged underreporting of counterparty exposures that resulted in underpayment of assessments for those quarters, and its Enforcement Section is also conducting a parallel investigation related to the same alleged reporting error. BANA disagrees with the FDIC's interpretation of the regulations as they existed during the relevant time period and is defending itself against the FDIC's claims. Pending final resolution, BANA has pledged security satisfactory to the FDIC related to the disputed additional assessment amounts. On March 27, 2018, the District Court denied BANA's partial motion to dismiss certain of the FDIC's claims. On January 24, 2023, the magistrate judge assigned to the matter by the District Court judge held oral argument on the parties' motions for summary judgment and took the motions under advisement.

LIBOR

The Corporation, BANA and certain Merrill Lynch entities have been named as defendants along with most of the other LIBOR panel banks in a number of individual and putative class actions by persons alleging they sustained losses on U.S. dollar LIBOR-based financial instruments as a result of collusion or manipulation by defendants regarding the setting of U.S. dollar LIBOR. Plaintiffs assert a variety of claims, including antitrust, Commodity Exchange Act, Racketeer Influenced and Corrupt Organizations (RICO), Securities Exchange Act of 1934, common law fraud and breach of contract claims, and seek compensatory, treble and punitive damages, and injunctive relief. All but one of the cases naming the Corporation and its affiliates relating to U.S. dollar LIBOR are pending in the U.S. District Court for the Southern District of New York ("District Court"). The District Court has dismissed all RICO claims, and dismissed all manipulation claims against Bank of America entities based on alleged trader conduct. The District Court has also substantially limited the scope of antitrust, Commodity Exchange Act and various other claims, including by dismissing in their entirety certain individual and putative class plaintiffs' antitrust claims for lack of standing. On December 30, 2021, the U.S. Court of Appeals for the Second Circuit affirmed the dismissal of these antitrust claims for lack of standing. Certain individual and putative class actions remain pending against the Corporation, BANA and certain Merrill Lynch entities. On February 28, 2018, the District Court granted certification of a class of persons that purchased OTC swaps and notes that referenced U.S. dollar LIBOR from one of the U.S. dollar LIBOR panel banks, limited to claims under Section 1 of the Sherman Act.

NOTE 13 Shareholders' Equity

Common Stock

Declared Quarterly Cash Dividends on Common Stock [1]

Declaration Date	Record Date	Payment Date	Dividend Per Share
February 1, 2023	March 3, 2023	March 31, 2023	$ 0.22
October 19, 2022	December 2, 2022	December 30, 2022	0.22
July 20, 2022	September 2, 2022	September 30, 2022	0.22
April 27, 2022	June 3, 2022	June 24, 2022	0.21
February 2, 2022	March 4, 2022	March 25, 2022	0.21

[1] In 2022, and through February 22, 2023.

The cash dividends paid per share of common stock were $0.86 $0.78 and $0.72 for 2022, 2021 and 2020, respectively.

The table below summarizes common stock repurchases during 2022, 2021 and 2020.

Common Stock Repurchase Summary

(in millions)	2022	2021	2020
Total share repurchases, including CCAR capital plan repurchases	**126**	615	227
Purchase price of shares repurchased and retired [1]	**$ 5,073**	$ 25,126	$ 7,025

[1] Consists of repurchases pursuant to the Corporation's CCAR capital plans.

During 2022, in connection with employee stock plans, the Corporation issued 73 million shares of its common stock and, to satisfy tax withholding obligations, repurchased 28 million shares of its common stock. At December 31, 2022, the Corporation had reserved 491 million unissued shares of common stock for future issuances under employee stock plans, convertible notes and preferred stock.

Preferred Stock

The cash dividends declared on preferred stock were $1.6 billion in 2022 and $1.4 billion in both 2021 and 2020.

On January 25, 2022, the Corporation issued 70,000 shares of 4.375% Fixed-Rate Reset Non-Cumulative Preferred Stock, Series RR for $1.8 billion, with quarterly dividends commencing in April 2022. The Series RR preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

On January 31, 2022 the Corporation issued 28,000 shares of 4.750% Non-Cumulative Preferred Stock, Series SS for $700 million, with quarterly dividends commencing in May 2022. The Series SS preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

On April 22, 2022, the Corporation issued 80,000 shares of 6.125% Fixed-Rate Reset Non-Cumulative Preferred Stock, Series TT for $2.0 billion, with quarterly dividends commencing in July 2022. The Series TT preferred stock has a liquidation preference of $25,000 per share and is subject to certain restrictions in the event the Corporation fails to declare and pay full dividends.

Through a cash tender offer announced and completed in the fourth quarter of 2022, the Corporation partially repurchased Series E, Series FF, Series HH, Series JJ, Series KK, Series LL, Series MM, Series NN, Series PP, Series QQ, Series RR, Series SS, Series 1 and Series 5 preferred stock with a total carrying value of $737 million for $654 million in cash, with $83 million recognized in additional paid-in capital as a preferred stock benefit.

All series of preferred stock in the Preferred Stock Summary table have a par value of $0.01 per share, are not subject to the operation of a sinking fund, have no participation rights, and with the exception of the Series L Preferred Stock, are not convertible. The holders of the Series B Preferred Stock and Series 1 through 5 Preferred Stock have general voting rights and vote together with the common stock. The holders of the other series included in the table have no general voting rights. All outstanding series of preferred stock of the Corporation have preference over the Corporation's common stock with respect to the payment of dividends and distribution of the Corporation's assets in the event of a liquidation or dissolution. With the exception of the Series B, F and G Preferred Stock, if any dividend payable on these series is in arrears for three or more semi-annual or six or more quarterly dividend periods, as applicable (whether consecutive or not), the holders of these series and any other class or series of preferred stock ranking equally as to payment of dividends and upon which equivalent voting rights have been conferred and are exercisable (voting as a single class) will be entitled to vote for the election of two additional directors. These voting rights terminate when the Corporation has paid in full dividends on these series for at least two semi-annual or four quarterly dividend periods, as applicable, following the dividend arrearage.

The 7.25% Non-Cumulative Perpetual Convertible Preferred Stock, Series L (Series L Preferred Stock) does not have early redemption/call rights. Each share of the Series L Preferred Stock may be converted at any time, at the option of the holder, into 20 shares of the Corporation's common stock plus cash in lieu of fractional shares. The Corporation may cause some or all of the Series L Preferred Stock, at its option, at any time or from time to time, to be converted into shares of common stock at the then-applicable conversion rate if, for 20 trading days during any period of 30 consecutive trading days, the closing price of common stock exceeds 130 percent of the then-applicable conversion price of the Series L Preferred Stock. If a conversion of Series L Preferred Stock occurs at the option of the holder, subsequent to a dividend record date but prior to the dividend payment date, the Corporation will still pay any accrued dividends payable.

The table below presents a summary of perpetual preferred stock outstanding at December 31, 2022.

Preferred Stock Summary

(Dollars in millions, except as noted)

Series	Description	Initial Issuance Date	Total Shares Outstanding	Liquidation Preference per Share (in dollars)	Carrying Value	Per Annum Dividend Rate	Dividend per Share (in dollars)[1]	Annual Dividend	Redemption Period [2]
Series B	7.000% Cumulative Redeemable	June 1997	7,076	$ 100	$ 1	7.00 %	$ 7	$ —	n/a
Series E [3]	Floating Rate Non-Cumulative	November 2006	12,317	25,000	308	3-mo. LIBOR + 35 bps [4]	1.01	13	On or after November 15, 2011
Series F	Floating Rate Non-Cumulative	March 2012	1,409	100,000	141	3-mo. LIBOR + 40 bps [4]	4,055.56	6	On or after March 15, 2012
Series G	Adjustable Rate Non-Cumulative	March 2012	4,925	100,000	492	3-mo. LIBOR + 40 bps [4]	4,055.56	20	On or after March 15, 2012
Series L	7.25% Non-Cumulative Perpetual Convertible	January 2008	3,080,182	1,000	3,080	7.25 %	72.50	223	n/a
Series U [5]	Fixed-to-Floating Rate Non-Cumulative	May 2013	40,000	25,000	1,000	5.2% to, but excluding, 6/1/23; 3-mo. LIBOR +313.5 bps thereafter	52.00	52	On or after June 1, 2023
Series X [5]	Fixed-to-Floating Rate Non-Cumulative	September 2014	80,000	25,000	2,000	6.250% to, but excluding, 9/5/24; 3-mo. LIBOR +370.5 bps thereafter	62.50	125	On or after September 5, 2024
Series Z [5]	Fixed-to-Floating Rate Non-Cumulative	October 2014	56,000	25,000	1,400	6.500% to, but excluding, 10/23/24; 3-mo. LIBOR +417.4 bps thereafter	65.00	91	On or after October 23, 2024
Series AA [5]	Fixed-to-Floating Rate Non-Cumulative	March 2015	76,000	25,000	1,900	6.100% to, but excluding, 3/17/25; 3-mo. LIBOR +389.8 bps thereafter	61.00	116	On or after March 17, 2025
Series DD [5]	Fixed-to-Floating Rate Non-Cumulative	March 2016	40,000	25,000	1,000	6.300% to, but excluding, 3/10/26; 3-mo. LIBOR +455.3 bps thereafter	63.00	63	On or after March 10, 2026
Series FF [5]	Fixed-to-Floating Rate Non-Cumulative	March 2018	90,834	25,000	2,271	5.875% to, but excluding, 3/15/28; 3-mo. LIBOR +293.1 bps thereafter	58.75	139	On or after March 15, 2028
Series GG [3]	6.000% Non-Cumulative	May 2018	54,000	25,000	1,350	6.000 %	1.50	81	On or after May 16, 2023
Series HH [3]	5.875% Non-Cumulative	July 2018	34,049	25,000	851	5.875 %	1.47	50	On or after July 24, 2023
Series JJ [5]	Fixed-to-Floating Rate Non-Cumulative	June 2019	34,171	25,000	854	5.125% to, but excluding, 6/20/24; 3-mo. LIBOR +329.2 bps thereafter	51.25	51	On or after June 20, 2024
Series KK [3]	5.375% Non-Cumulative	June 2019	55,273	25,000	1,382	5.375 %	1.34	75	On or after June 25, 2024
Series LL [3]	5.000% Non-Cumulative	September 2019	52,045	25,000	1,301	5.000 %	1.25	66	On or after September 17, 2024
Series MM [5]	Fixed-to-Floating Rate Non-Cumulative	January 2020	30,753	25,000	769	4.300 %	43.00	46	On or after January 28, 2025
Series NN [3]	4.375% Non-Cumulative	October 2020	42,993	25,000	1,075	4.375 %	1.09	48	On or after November 3, 2025
Series PP [3]	4.125% Non-Cumulative	January 2021	36,500	25,000	912	4.125 %	1.03	38	On or after February 2, 2026
Series QQ [3]	4.250% Non-Cumulative	October 2021	51,879	25,000	1,297	4.250 %	1.12	58	On or after November 17, 2026
Series RR [6]	4.375% Fixed-Rate Reset Non-Cumulative	January 2022	66,738	25,000	1,668	4.375% to, but excluding, 1/27/27; 5-yr U.S. Treasury Rate +276 bps thereafter	43.99	77	On or after January 27, 2027
Series SS [3]	4.750% Non-Cumulative	January 2022	27,463	25,000	687	4.750 %	0.95	27	On or after February 17, 2027
Series TT [6]	6.125% Fixed-Rate Reset Non-Cumulative	April 2022	80,000	25,000	2,000	6.125% to, but excluding, 4/27/27; 5-yr U.S. Treasury Rate +323.1 bps thereafter	46.79	94	On or after April 27, 2027
Series 1 [7]	Floating Rate Non-Cumulative	November 2004	3,186	30,000	96	3-mo. LIBOR + 75 bps [8]	0.80	3	On or after November 28, 2009
Series 2 [7]	Floating Rate Non-Cumulative	March 2005	9,967	30,000	299	3-mo. LIBOR + 65 bps [8]	0.80	10	On or after November 28, 2009
Series 4 [7]	Floating Rate Non-Cumulative	November 2005	7,010	30,000	210	3-mo. LIBOR + 75 bps [4]	1.01	9	On or after November 28, 2010
Series 5 [7]	Floating Rate Non-Cumulative	March 2007	13,331	30,000	400	3-mo. LIBOR + 50 bps [4]	1.01	17	On or after May 21, 2012
Issuance costs and certain adjustments					(347)				
Total			**4,088,101**		**$ 28,397**				

[1] For all series of preferred stock other than Series B, Series F, Series G and Series L, "Dividend per Share" means the amount of dividends per depositary share of such series.
[2] The Corporation may redeem series of preferred stock on or after the redemption date, in whole or in part, at its option, at the liquidation preference plus declared and unpaid dividends. Series B and Series L Preferred Stock do not have early redemption/call rights.
[3] Ownership is held in the form of depositary shares, each representing a 1/1,000th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared.
[4] Subject to 4.00% minimum rate per annum.
[5] Ownership is held in the form of depositary shares, each representing a 1/25th interest in a share of preferred stock, paying a semi-annual cash dividend, if and when declared, until the first redemption date at which time, it adjusts to a quarterly cash dividend, if and when declared, thereafter.
[6] Ownership is held in the form of depositary shares, each representing a 1/25th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared.
[7] Ownership is held in the form of depositary shares, each representing a 1/1,200th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared.
[8] Subject to 3.00% minimum rate per annum.
n/a = not applicable

NOTE 14 Accumulated Other Comprehensive Income (Loss)

The table below presents the changes in accumulated OCI after-tax for 2022, 2021 and 2020.

(Dollars in millions)	Debt Securities	Debit Valuation Adjustments	Derivatives	Employee Benefit Plans	Foreign Currency	Total
Balance, December 31, 2019	$ 323	$ (1,494)	$ (400)	$ (4,168)	$ (894)	$ (6,633)
Net change	4,799	(498)	**826**	**(98)**	**(52)**	**4,977**
Balance, December 31, 2020	$ 5,122	$ (1,992)	$ 426	$ (4,266)	$ (946)	$ (1,656)
Net change	(2,077)	356	(2,306)	624	(45)	(3,448)
Balance, December 31, 2021	$ 3,045	$ (1,636)	$ (1,880)	$ (3,642)	$ (991)	$ (5,104)
Net change	**(6,028)**	**755**	**(10,055)**	**(667)**	**(57)**	**(16,052)**
Balance, December 31, 2022	**$ (2,983)**	**$ (881)**	**$ (11,935)**	**$ (4,309)**	**$ (1,048)**	**$ (21,156)**

The table below presents the net change in fair value recorded in accumulated OCI, net realized gains and losses reclassified into earnings and other changes for each component of OCI pre- and after-tax for 2022, 2021 and 2020.

	Pretax	Tax effect	After-tax	Pretax	Tax effect	After-tax	Pretax	Tax effect	After-tax
(Dollars in millions)		2022			2021			2020	
Debt securities:									
Net increase (decrease) in fair value	**$ (7,995)**	**$ 1,991**	**$ (6,004)**	$ (2,749)	$ 689	$ (2,060)	$ 6,819	$ (1,712)	$ 5,107
Net realized (gains) losses reclassified into earnings [1]	**(32)**	**8**	**(24)**	(22)	5	(17)	(411)	103	(308)
Net change	**(8,027)**	**1,999**	**(6,028)**	(2,771)	694	(2,077)	6,408	(1,609)	4,799
Debit valuation adjustments:									
Net increase (decrease) in fair value	**980**	**(237)**	**743**	449	(103)	346	(669)	156	(513)
Net realized (gains) losses reclassified into earnings [1]	**16**	**(4)**	**12**	13	(3)	10	19	(4)	15
Net change	**996**	**(241)**	**755**	462	(106)	356	(650)	152	(498)
Derivatives:									
Net increase (decrease) in fair value	**(13,711)**	**3,430**	**(10,281)**	(2,849)	703	(2,146)	1,098	(268)	830
Reclassifications into earnings:									
Net interest income	**332**	**(84)**	**248**	(166)	48	(118)	6	(1)	5
Compensation and benefits expense	**(29)**	**7**	**(22)**	(55)	13	(42)	(12)	3	(9)
Net realized (gains) losses reclassified into earnings	**303**	**(77)**	**226**	(221)	61	(160)	(6)	2	(4)
Net change	**(13,408)**	**3,353**	**(10,055)**	(3,070)	764	(2,306)	1,092	(266)	826
Employee benefit plans:									
Net increase (decrease) in fair value	**(1,103)**	**276**	**(827)**	463	(72)	391	(381)	80	(301)
Net actuarial losses and other reclassified into earnings [2]	**198**	**(49)**	**149**	295	(67)	228	261	(63)	198
Settlements, curtailments and other	**11**	**—**	**11**	5	—	5	5	—	5
Net change	**(894)**	**227**	**(667)**	763	(139)	624	(115)	17	(98)
Foreign currency:									
Net increase (decrease) in fair value	**332**	**(390)**	**(58)**	296	(341)	(45)	(251)	199	(52)
Net realized (gains) losses reclassified into earnings [1]	**—**	**1**	**1**	(5)	5	—	(1)	1	—
Net change	**332**	**(389)**	**(57)**	291	(336)	(45)	(252)	200	(52)
Total other comprehensive income (loss)	**$(21,001)**	**$ 4,949**	**$(16,052)**	$ (4,325)	$ 877	$ (3,448)	$ 6,483	$ (1,506)	$ 4,977

[1] Reclassifications of pretax debt securities, DVA and foreign currency (gains) losses are recorded in other income in the Consolidated Statement of Income.
[2] Reclassifications of pretax employee benefit plan costs are recorded in other general operating expense in the Consolidated Statement of Income.

NOTE 15 Earnings Per Common Share

The calculation of EPS and diluted EPS for 2022, 2021 and 2020 is presented below. For more information on the calculation of EPS, see *Note 1 – Summary of Significant Accounting Principles.*

(In millions, except per share information)	2022	2021	2020
Earnings per common share			
Net income	**$ 27,528**	$ 31,978	$ 17,894
Preferred stock dividends and other	**(1,513)**	(1,421)	(1,421)
Net income applicable to common shareholders	**$ 26,015**	$ 30,557	$ 16,473
Average common shares issued and outstanding	**8,113.7**	8,493.3	8,753.2
Earnings per common share	**$ 3.21**	$ 3.60	$ 1.88
Diluted earnings per common share			
Net income applicable to common shareholders	**$ 26,015**	$ 30,557	$ 16,473
Average common shares issued and outstanding	**8,113.7**	8,493.3	8,753.2
Dilutive potential common shares [1]	**53.8**	65.1	43.7
Total diluted average common shares issued and outstanding	**8,167.5**	8,558.4	8,796.9
Diluted earnings per common share	**$ 3.19**	$ 3.57	$ 1.87

[1] Includes incremental dilutive shares from preferred stock, restricted stock units, restricted stock and warrants.

For 2022, 2021 and 2020, 62 average dilutive potential common shares associated with the Series L preferred stock were not included in the diluted share count because the result would have been antidilutive under the "if-converted" method.

NOTE 16 Regulatory Requirements and Restrictions

The Federal Reserve, Office of the Comptroller of the Currency (OCC) and FDIC (collectively, U.S. banking regulators) jointly establish regulatory capital adequacy rules, including Basel 3, for U.S. banking organizations. As a financial holding company, the Corporation is subject to capital adequacy rules issued by the Federal Reserve. The Corporation's banking entity affiliates are subject to capital adequacy rules issued by the OCC.

The Corporation and its primary banking entity affiliate, BANA, are Advanced approaches institutions under Basel 3. As Advanced approaches institutions, the Corporation and its banking entity affiliates are required to report regulatory risk-based capital ratios and risk-weighted assets under both the Standardized and Advanced approaches. The approach that yields the lower ratio is used to assess capital adequacy, including under the Prompt Corrective Action (PCA) framework.

The Corporation is required to maintain a minimum supplementary leverage ratio (SLR) of 3.0 percent plus a leverage buffer of 2.0 percent in order to avoid certain restrictions on capital distributions and discretionary bonus payments. The Corporation's insured depository institution subsidiaries are required to maintain a minimum 6.0 percent SLR to be considered well capitalized under the PCA framework.

The table below presents capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2022 and 2021 for the Corporation and BANA.

Regulatory Capital under Basel 3

	Bank of America Corporation			Bank of America, N.A.		
(Dollars in millions, except as noted)	Standardized Approach [1]	Advanced Approaches [1]	Regulatory Minimum [2]	Standardized Approach [1]	Advanced Approaches [1]	Regulatory Minimum [3]
	December 31, 2022					
Risk-based capital metrics:						
Common equity tier 1 capital	$ 180,060	$ 180,060		$ 181,089	$ 181,089	
Tier 1 capital	208,446	208,446		181,089	181,089	
Total capital [4]	238,773	230,916		194,254	186,648	
Risk-weighted assets (in billions)	1,605	1,411		1,386	1,087	
Common equity tier 1 capital ratio	11.2 %	12.8 %	10.4 %	13.1 %	16.7 %	7.0 %
Tier 1 capital ratio	13.0	14.8	11.9	13.1	16.7	8.5
Total capital ratio	14.9	16.4	13.9	14.0	17.2	10.5
Leverage-based metrics:						
Adjusted quarterly average assets (in billions) [5]	$ 2,997	$ 2,997		$ 2,358	$ 2,358	
Tier 1 leverage ratio	7.0 %	7.0 %	4.0	7.7 %	7.7 %	5.0
Supplementary leverage exposure (in billions)		$ 3,523			$ 2,785	
Supplementary leverage ratio		5.9 %	5.0		6.5 %	6.0
	December 31, 2021					
Risk-based capital metrics:						
Common equity tier 1 capital	$ 171,759	$ 171,759		$ 182,526	$ 182,526	
Tier 1 capital	196,465	196,465		182,526	182,526	
Total capital [4]	227,592	220,616		194,773	188,091	
Risk-weighted assets (in billions)	1,618	1,399		1,352	1,048	
Common equity tier 1 capital ratio	10.6 %	12.3 %	9.5 %	13.5 %	17.4 %	7.0 %
Tier 1 capital ratio	12.1	14.0	11.0	13.5	17.4	8.5
Total capital ratio	14.1	15.8	13.0	14.4	17.9	10.5
Leverage-based metrics:						
Adjusted quarterly average assets (in billions) [5]	$ 3,087	$ 3,087		$ 2,414	$ 2,414	
Tier 1 leverage ratio	6.4 %	6.4 %	4.0	7.6 %	7.6 %	5.0
Supplementary leverage exposure (in billions)		$ 3,604			$ 2,824	
Supplementary leverage ratio		5.5 %	5.0		6.5 %	6.0

(1) As of December 31, 2022 and 2021, capital ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of the current expected credit losses accounting standard on January 1, 2020.

(2) The capital conservation buffer and global systemically important bank (G-SIB) surcharge were 2.5 percent at both December 31, 2022 and 2021. The Corporation's stress capital buffer applied in place of the capital conservation buffer under the Standardized approach was 3.4 percent at December 31, 2022 and 2.5 percent at December 31, 2021. The countercyclical capital buffer for both periods was zero. The CET1 capital regulatory minimum is the sum of the CET1 capital ratio minimum of 4.5 percent, the Corporation's G-SIB surcharge of 2.5 percent and the Corporation's capital conservation buffer of 2.5 percent or the SCB, as applicable, of 3.4 percent at December 31, 2022 and 2.5 percent at December 31, 2021. The SLR regulatory minimum includes a leverage buffer of 2.0 percent.

(3) Risk-based capital regulatory minimums at December 31, 2022 and 2021 are the minimum ratios under Basel 3, including a capital conservation buffer of 2.5 percent. The regulatory minimums for the leverage ratios as of both period ends are the percent required to be considered well capitalized under the PCA framework.

(4) Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.

(5) Reflects total average assets adjusted for certain Tier 1 capital deductions.

The capital adequacy rules issued by the U.S. banking regulators require institutions to meet the established minimums outlined in the table above. Failure to meet the minimum requirements can lead to certain mandatory and discretionary actions by regulators that could have a material adverse impact on the Corporation's financial position. At December 31, 2022 and 2021, the Corporation and its banking entity affiliates were well capitalized.

Other Regulatory Matters

At December 31, 2022 and 2021, the Corporation had cash and cash equivalents in the amount of $5.6 billion and $4.0 billion, and securities with a fair value of $16.6 billion and $10.6 billion that were segregated in compliance with securities regulations. Cash and cash equivalents segregated in compliance with securities regulations are a component of restricted cash. For more information, see *Note 10 – Securities Financing Agreements, Short-term Borrowings, Collateral and Restricted Cash*. In addition, at December 31, 2022 and 2021, the Corporation had cash deposited with clearing organizations of $20.7 billion and $28.6 billion primarily recorded in other assets on the Consolidated Balance Sheet.

Bank Subsidiary Distributions

The primary sources of funds for cash distributions by the Corporation to its shareholders are capital distributions received from its bank subsidiaries, BANA and Bank of America California, N.A. In 2022, the Corporation received dividends of $22.0 billion from BANA and $250 million from Bank of America California, N.A.

The amount of dividends that a subsidiary bank may declare in a calendar year without OCC approval is the subsidiary bank's net profits for that year combined with its retained net profits for the preceding two years. Retained net profits, as defined by the OCC, consist of net income less dividends declared during the period. In 2023, BANA can declare and pay dividends of approximately $16.1 billion to the Corporation plus an additional amount equal to its retained net profits for 2023 up to the date of any such dividend declaration. Bank of America California, N.A. can pay dividends of $173 million in 2023 plus an additional amount equal to its retained net profits for 2023 up to the date of any such dividend declaration.

NOTE 17 Employee Benefit Plans

Pension and Postretirement Plans

The Corporation sponsors a qualified noncontributory trusteed pension plan (Qualified Pension Plan), a number of noncontributory nonqualified pension plans and postretirement health and life plans that cover eligible employees. Non-U.S. pension plans sponsored by the Corporation vary based on the country and local practices.

The Qualified Pension Plan has a balance guarantee feature for account balances with participant-selected investments, applied at the time a benefit payment is made from the plan that effectively provides principal protection for participant balances transferred and certain compensation credits. The Corporation is responsible for funding any shortfall on the guarantee feature.

Benefits earned under the Qualified Pension Plan have been frozen. Thereafter, the cash balance accounts continue to earn investment credits or interest credits in accordance with the terms of the plan document.

The Corporation has an annuity contract that guarantees the payment of benefits vested under a terminated U.S. pension plan (Other Pension Plan). The Corporation, under a supplemental agreement, may be responsible for or benefit from actual experience and investment performance of the annuity assets. The Corporation made no contribution under this agreement in 2022 or 2021. Contributions may be required in the future under this agreement.

The Corporation's noncontributory, nonqualified pension plans are unfunded and provide supplemental defined pension benefits to certain eligible employees.

In addition to retirement pension benefits, certain benefits-eligible employees may become eligible to continue participation as retirees in health care and/or life insurance plans sponsored by the Corporation. These plans are referred to as the Postretirement Health and Life Plans.

The Pension and Postretirement Plans table summarizes the changes in the fair value of plan assets, changes in the projected benefit obligation (PBO), the funded status of both the accumulated benefit obligation (ABO) and the PBO, and the weighted-average assumptions used to determine benefit obligations for the pension plans and postretirement plans at December 31, 2022 and 2021. The estimate of the Corporation's PBO associated with these plans considers various actuarial assumptions, including assumptions for mortality rates and discount rates. The discount rate assumptions are derived from a cash flow matching technique that utilizes rates that are based on Aa-rated corporate bonds with cash flows that match estimated benefit payments of each of the plans. The increases in the weighted-average discount rates in 2022 resulted in a decrease to the PBO of $5.3 billion at December 31, 2022. The increases in the weighted-average discount rates in 2021 resulted in a decrease to the PBO of approximately $895 million at December 31, 2021. Significant gains and losses related to changes in the PBO for 2022 and 2021 primarily resulted from changes in the discount rate.

Pension and Postretirement Plans [1]

(Dollars in millions)	Qualified Pension Plan 2022	Qualified Pension Plan 2021	Non-U.S. Pension Plans 2022	Non-U.S. Pension Plans 2021	Nonqualified and Other Pension Plans 2022	Nonqualified and Other Pension Plans 2021	Postretirement Health and Life Plans 2022	Postretirement Health and Life Plans 2021
Fair value, January 1	**$ 22,078**	$ 21,776	**$ 3,031**	$ 3,078	**$ 2,585**	$ 2,789	**$ 117**	$ 143
Actual return on plan assets	**(3,896)**	1,215	**(898)**	62	**(332)**	(55)	**2**	—
Company contributions (withdrawals)	**—**	—	**30**	24	**(135)**	87	**45**	38
Plan participant contributions	**—**	—	**1**	1	**—**	—	**104**	107
Settlements and curtailments	**—**	—	**(51)**	(11)	**(6)**	—	**—**	—
Benefits paid	**(924)**	(913)	**(62)**	(84)	**(226)**	(236)	**(161)**	(171)
Federal subsidy on benefits paid	**n/a**	n/a	**n/a**	n/a	**n/a**	n/a	**—**	—
Foreign currency exchange rate changes	**n/a**	n/a	**(323)**	(39)	**n/a**	n/a	**n/a**	n/a
Fair value, December 31	**$ 17,258**	$ 22,078	**$ 1,728**	$ 3,031	**$ 1,886**	$ 2,585	**$ 107**	$ 117
Change in projected benefit obligation								
Projected benefit obligation, January 1	**$ 15,676**	$ 16,427	**$ 3,116**	$ 3,340	**$ 2,753**	$ 3,005	**$ 928**	$ 1,007
Service cost	**—**	—	**29**	28	**—**	—	**4**	5
Interest cost	**438**	414	**53**	45	**74**	67	**25**	24
Plan participant contributions	**—**	—	**1**	1	**—**	—	**104**	107
Plan amendments	**—**	—	**3**	—	**—**	—	**—**	—
Settlements and curtailments	**—**	—	**(51)**	(11)	**(6)**	—	**—**	—
Actuarial loss (gain)	**(3,610)**	(252)	**(1,054)**	(152)	**(486)**	(83)	**(198)**	(44)
Benefits paid	**(924)**	(913)	**(62)**	(84)	**(226)**	(236)	**(161)**	(171)
Federal subsidy on benefits paid	**n/a**	n/a	**n/a**	n/a	**n/a**	n/a	**—**	—
Foreign currency exchange rate changes	**n/a**	n/a	**(283)**	(51)	**n/a**	n/a	**(2)**	—
Projected benefit obligation, December 31	**$ 11,580**	$ 15,676	**$ 1,752**	$ 3,116	**$ 2,109**	$ 2,753	**$ 700**	$ 928
Amounts recognized on Consolidated Balance Sheet								
Other assets	**$ 5,678**	$ 6,402	**$ 370**	$ 550	**$ 495**	$ 777	**$ —**	$ —
Accrued expenses and other liabilities	**—**	—	**(394)**	(635)	**(718)**	(945)	**(593)**	(811)
Net amount recognized, December 31	**$ 5,678**	$ 6,402	**$ (24)**	$ (85)	**$ (223)**	$ (168)	**$ (593)**	$ (811)
Funded status, December 31								
Accumulated benefit obligation	**$ 11,580**	$ 15,676	**$ 1,694**	$ 3,031	**$ 2,109**	$ 2,753	**n/a**	n/a
Overfunded (unfunded) status of ABO	**5,678**	6,402	**34**	—	**(223)**	(168)	**n/a**	n/a
Provision for future salaries	**—**	—	**58**	85	**—**	—	**n/a**	n/a
Projected benefit obligation	**11,580**	15,676	**1,752**	3,116	**2,109**	2,753	**$ 700**	$ 928
Weighted-average assumptions, December 31								
Discount rate	**5.54 %**	2.86 %	**4.59 %**	1.85 %	**5.58 %**	2.80 %	**5.56 %**	2.85 %
Rate of compensation increase	**n/a**	n/a	**4.25**	4.46	**4.00**	4.00	**n/a**	n/a
Interest-crediting rate	**5.36 %**	4.83 %	**2.03**	1.90	**4.69**	4.22	**n/a**	n/a

[1] The measurement date for all of the above plans was December 31 of each year reported.
n/a = not applicable

The Corporation's estimate of its contributions to be made to the Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans in 2023 is $26 million, $89 million and $22 million, respectively. The Corporation does not expect to make a contribution to the Qualified Pension Plan in 2023. It is the policy of the Corporation to fund no less than the minimum funding amount required by the Employee Retirement Income Security Act of 1974 (ERISA).

Pension Plans with ABO and PBO in excess of plan assets as of December 31, 2022 and 2021 are presented in the table below. For these plans, funding strategies vary due to legal requirements and local practices.

Plans with ABO and PBO in Excess of Plan Assets

(Dollars in millions)	Non-U.S. Pension Plans 2022	Non-U.S. Pension Plans 2021	Nonqualified and Other Pension Plans 2022	Nonqualified and Other Pension Plans 2021
PBO	**$ 458**	$ 841	**$ 719**	$ 945
ABO	**416**	780	**719**	945
Fair value of plan assets	**71**	207	**1**	1

Components of Net Periodic Benefit Cost

(Dollars in millions)	Qualified Pension Plan 2022	2021	2020	Non-U.S. Pension Plans 2022	2021	2020
Components of net periodic benefit cost (income)						
Service cost	**$ —**	$ —	$ —	**$ 29**	$ 28	$ 20
Interest cost	**438**	414	500	**53**	45	49
Expected return on plan assets	**(1,204)**	(1,173)	(1,154)	**(59)**	(70)	(66)
Amortization of actuarial loss (gain) and prior service cost	**140**	193	173	**14**	19	9
Other	**—**	—	—	**10**	5	8
Net periodic benefit cost (income)	**$ (626)**	$ (566)	$ (481)	**$ 47**	$ 27	$ 20
Weighted-average assumptions used to determine net cost for years ended December 31						
Discount rate	**2.86 %**	2.57 %	3.32 %	**1.85 %**	1.35 %	1.81 %
Expected return on plan assets	**5.75**	5.75	6.00	**2.17**	2.30	2.57
Rate of compensation increase	**n/a**	n/a	n/a	**4.46**	4.11	4.10

(Dollars in millions)	Nonqualified and Other Pension Plans 2022	2021	2020	Postretirement Health and Life Plans 2022	2021	2020
Components of net periodic benefit cost (income)						
Service cost	**$ —**	$ —	$ 1	**$ 4**	$ 5	$ 5
Interest cost	**74**	67	90	**25**	24	32
Expected return on plan assets	**(59)**	(49)	(71)	**(2)**	(3)	(4)
Amortization of actuarial loss (gain) and prior service cost	**54**	63	50	**(9)**	20	29
Other	**1**	—	—	**—**	—	(2)
Net periodic benefit cost (income)	**$ 70**	$ 81	$ 70	**$ 18**	$ 46	$ 60
Weighted-average assumptions used to determine net cost for years ended December 31						
Discount rate	**2.80 %**	2.33 %	3.20 %	**2.85 %**	2.48 %	3.27 %
Expected return on plan assets	**2.38**	1.88	2.77	**2.00**	2.00	2.00
Rate of compensation increase	**4.00**	4.00	4.00	**n/a**	n/a	n/a

n/a = not applicable

The asset valuation method used to calculate the expected return on plan assets component of net periodic benefit cost for the Qualified Pension Plan recognizes 60 percent of the prior year's market gains or losses at the next measurement date with the remaining 40 percent spread equally over the subsequent four years.

Gains and losses for all benefit plans except postretirement health care are recognized in accordance with the standard amortization provisions of the applicable accounting guidance. Net periodic postretirement health and life expense was determined using the "projected unit credit" actuarial method. For the Postretirement Health and Life Plans, 50 percent of the unrecognized gain or loss at the beginning of the year (or at subsequent remeasurement) is recognized on a level basis during the year.

Assumed health care cost trend rates affect the postretirement benefit obligation and benefit cost reported for the Postretirement Health and Life Plans. The assumed health care cost trend rate used to measure the expected cost of benefits covered by the Postretirement Health and Life Plans is 6.50 percent for 2023, reducing in steps to 5.00 percent in 2028 and later years.

The Corporation's net periodic benefit cost (income) recognized for the plans is sensitive to the discount rate and expected return on plan assets. For the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans, a 25 bp decline in discount rates and expected return on assets would not have had a significant impact on the net periodic benefit cost for 2022.

Pretax Amounts included in Accumulated OCI and OCI

(Dollars in millions)	Qualified Pension Plan 2022	2021	Non-U.S. Pension Plans 2022	2021	Nonqualified and Other Pension Plans 2022	2021	Postretirement Health and Life Plans 2022	2021	Total 2022	2021
Net actuarial loss (gain)	**$ 4,775**	$ 3,425	**$ 312**	$ 456	**$ 796**	$ 945	**$ (187)**	$ 4	**$ 5,696**	$ 4,830
Prior service cost (credits)	**—**	—	**43**	17	**—**	—	**(1)**	(3)	**42**	14
Amounts recognized in accumulated OCI	**$ 4,775**	$ 3,425	**$ 355**	$ 473	**$ 796**	$ 945	**$ (188)**	$ 1	**$ 5,738**	$ 4,844
Current year actuarial loss (gain)	**$ 1,490**	$ (294)	**$ (107)**	$ (154)	**$ (95)**	$ 21	**$ (198)**	$ (41)	**$ 1,090**	$ (468)
Amortization of actuarial gain (loss) and prior service cost	**(140)**	(193)	**(14)**	(19)	**(54)**	(63)	**9**	(20)	**(199)**	(295)
Current year prior service cost (credit)	**—**	—	**3**	—	**—**	—	**—**	—	**3**	—
Amounts recognized in OCI	**$ 1,350**	$ (487)	**$ (118)**	$ (173)	**$ (149)**	$ (42)	**$ (189)**	$ (61)	**$ 894**	$ (763)

Plan Assets

The Qualified Pension Plan has been established as a retirement vehicle for participants, and trusts have been established to secure benefits promised under the Qualified Pension Plan. The Corporation's policy is to invest the trust assets in a prudent manner for the exclusive purpose of providing benefits to participants and defraying reasonable expenses of administration. The Corporation's investment strategy is designed to provide a total return that, over the long term, increases the ratio of assets to liabilities. The strategy attempts to maximize the investment return on assets at a level of risk deemed appropriate by the Corporation while complying with ERISA and any applicable regulations and laws. The investment strategy utilizes asset allocation as a principal determinant for establishing the risk/return profile of the assets. Asset allocation ranges are established, periodically reviewed and adjusted as funding levels and liability characteristics change. Active and passive investment managers are employed to help enhance the risk/return profile of the assets. An additional aspect of the investment strategy used to minimize risk (part of the asset allocation plan) includes matching the exposure of participant-selected investment measures.

The assets of the Non-U.S. Pension Plans are primarily attributable to a U.K. pension plan. This U.K. pension plan's assets are invested prudently so that the benefits promised to members are provided with consideration given to the nature and the duration of the plans' liabilities. The selected asset allocation strategy is designed to achieve a higher return than the lowest risk strategy.

The expected rate of return on plan assets assumption was developed through analysis of historical market returns, historical asset class volatility and correlations, current market conditions, anticipated future asset allocations, the funds' past experience and expectations on potential future market returns. The expected return on plan assets assumption is determined using the calculated market-related value for the Qualified Pension Plan and the Other Pension Plan and the fair value for the Non-U.S. Pension Plans and Postretirement Health and Life Plans. The expected return on plan assets assumption represents a long-term average view of the performance of the assets in the Qualified Pension Plan, the Non-U.S. Pension Plans, the Other Pension Plan, and Postretirement Health and Life Plans, a return that may or may not be achieved during any one calendar year. The Other Pension Plan is invested solely in an annuity contract, which is primarily invested in fixed-income securities structured such that asset maturities match the duration of the plan's obligations.

The target allocations for 2023 by asset category for the Qualified Pension Plan, Non-U.S. Pension Plans, and Nonqualified and Other Pension Plans are presented in the table below. Equity securities for the Qualified Pension Plan include common stock of the Corporation in the amounts of $296 million (1.72 percent of total plan assets) and $398 million (1.80 percent of total plan assets) at December 31, 2022 and 2021.

2023 Target Allocation

	Percentage		
Asset Category	Qualified Pension Plan	Non-U.S. Pension Plans	Nonqualified and Other Pension Plans
Equity securities	15 - 50%	0 - 20%	0 - 5%
Debt securities	45 - 80%	40 - 75%	95 - 100%
Real estate	0 - 10%	0 - 15%	0 - 5%
Other	0 - 5%	10 - 40%	0 - 5%

Fair Value Measurements

For more information on fair value measurements, including descriptions of Level 1, 2 and 3 of the fair value hierarchy and the valuation methods employed by the Corporation, see *Note 1 – Summary of Significant Accounting Principles* and *Note 20 – Fair Value Measurements*. Combined plan investment assets measured at fair value by level and in total at December 31, 2022 and 2021 are summarized in the Fair Value Measurements table.

Fair Value Measurements

(Dollars in millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
	December 31, 2022				December 31, 2021			
Money market and interest-bearing cash	$ 1,329	$ —	$ —	$ 1,329	$ 1,339	$ —	$ —	$ 1,339
U.S. government and government agency obligations	3,313	704	5	4,022	4,948	934	6	5,888
Corporate debt	—	3,587	—	3,587	—	4,900	—	4,900
Non-U.S. debt securities	327	933	—	1,260	925	1,165	—	2,090
Asset-backed securities	—	1,273	—	1,273	—	1,485	—	1,485
Mutual and exchange-traded funds	1,247	—	—	1,247	1,395	—	—	1,395
Collective investment funds	—	1,988	—	1,988	—	3,419	—	3,419
Common and preferred stocks	3,901	—	—	3,901	4,826	—	—	4,826
Real estate investment trusts	76	—	—	76	87	—	—	87
Participant loans	—	—	6	6	—	—	7	7
Other investments [1]	1	23	410	434	1	29	630	660
Total plan investment assets, at fair value [2]	$ 10,194	$ 8,508	$ 421	$ 19,123	$ 13,521	$ 11,932	$ 643	$ 26,096

[1] Other investments includes insurance annuity contracts of $390 million and $612 million and other various investments of $44 million and $48 million at December 31, 2022 and 2021.
[2] At December 31, 2022 and 2021, excludes $1.9 billion and $1.7 billion of certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient and are not required to be classified in the fair value hierarchy.

The Level 3 Fair Value Measurements table presents a reconciliation of all plan investment assets measured at fair value using significant unobservable inputs (Level 3) during 2022, 2021 and 2020.

Level 3 Fair Value Measurements

(Dollars in millions)	Balance January 1	Actual Return on Plan Assets Still Held at the Reporting Date	Purchases, Sales and Settlements	Balance December 31
		2022		
U.S. government and government agency obligations	$ 6	$ —	$ (1)	$ 5
Participant Loans	7	—	(1)	6
Other investments	630	(8)	(212)	410
Total	$ 643	$ (8)	$ (214)	$ 421
		2021		
U.S. government and government agency obligations	$ 7	$ —	$ (1)	$ 6
Participant Loans	7	—	—	7
Other investments	684	(5)	(49)	630
Total	$ 698	$ (5)	$ (50)	$ 643
		2020		
U.S. government and government agency obligations	$ 8	$ —	$ (1)	$ 7
Participant loans	8	—	(1)	7
Other investments	628	6	50	684
Total	$ 644	$ 6	$ 48	$ 698

Projected Benefit Payments

Benefit payments projected to be made from the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans are presented in the table below.

Projected Benefit Payments

(Dollars in millions)	Qualified Pension Plan [1]	Non-U.S. Pension Plans [2]	Nonqualified and Other Pension Plans [2]	Postretirement Health and Life Plans [3]
2023	$ 892	$ 114	$ 235	$ 73
2024	927	108	232	70
2025	918	116	223	67
2026	921	117	215	64
2027	908	114	209	61
2028 - 2032	4,289	580	884	263

[1] Benefit payments expected to be made from the plan's assets.
[2] Benefit payments expected to be made from a combination of the plans' and the Corporation's assets.
[3] Benefit payments (net of retiree contributions) expected to be made from a combination of the plans' and the Corporation's assets.

Defined Contribution Plans

The Corporation maintains qualified and non-qualified defined contribution retirement plans. The Corporation recorded expense of $1.2 billion in 2022, 2021 and 2020 related to the qualified defined contribution plans. At December 31, 2022 and 2021, 179 million and 173 million shares of the Corporation's common stock were held by these plans. Payments to the plans for dividends on common stock were $153 million, $139 million and $138 million in 2022, 2021 and 2020, respectively.

Certain non-U.S. employees are covered under defined contribution pension plans that are separately administered in accordance with local laws.

NOTE 18 Stock-based Compensation Plans

The Corporation administers a number of equity compensation plans, with awards being granted predominantly from the Bank of America Corporation Equity Plan (BACEP). Under this plan, 715 million shares of the Corporation's common stock are authorized to be used for grants of awards.

During 2022 and 2021, the Corporation granted 102 million and 99 million RSU awards to certain employees under the BACEP. These RSUs were authorized to settle predominantly in shares of common stock of the Corporation. Certain RSUs will be settled in cash or contain settlement provisions that subject these awards to variable accounting whereby compensation expense is adjusted to fair value based on changes in the share price of the Corporation's common stock up to the settlement date. The RSUs granted in 2022 will generally vest over four years. Of the RSUs granted in 2021, 81 million will generally vest over four years and 18 million will vest over three years. The four-year awards vest primarily in one-fourth increments on each of the first four anniversaries of the grant date while the three-year awards vest primarily in one-third increments on each of the first three anniversaries of the grant date, provided that the employee remains continuously employed with the Corporation during that time, and will be expensed ratably over the vesting period, net of estimated forfeitures, for non-retirement eligible employees based on the grant-date fair value of the shares. Of the RSUs granted in 2022 and 2021 that vest over four years, 39 million and 27 million do not include retirement eligibility. For all other RSUs granted to employees who are retirement eligible, they are deemed authorized as of the beginning of the year preceding the grant date when the incentive award plans are generally approved. As a result, the estimated value is expensed ratably over the year preceding the grant date. The compensation cost for the stock-based plans was $2.9 billion, $3.0 billion and $2.1 billion, and the related income tax benefit was $697 million, $723 million and $505 million for 2022, 2021 and 2020, respectively. At December 31, 2022, there was an estimated $3.6 billion of total unrecognized compensation cost related to certain share-based compensation awards that is expected to be recognized over a period of up to four years, with a weighted-average period of 2.7 years.

Restricted Stock and Restricted Stock Units

The total fair value of restricted stock and restricted stock units vested in 2022, 2021 and 2020 was $3.4 billion, $2.3 billion and $2.3 billion, respectively. The table below presents the status at December 31, 2022 of the share-settled restricted stock and restricted stock units and changes during 2022.

Stock-settled Restricted Stock and Restricted Stock Units

	Shares/Units	Weighted-average Grant Date Fair Value
Outstanding at January 1, 2022	185,050,842	$ 31.54
Granted	100,108,395	46.10
Vested	(73,288,792)	30.85
Canceled	(9,310,647)	39.80
Outstanding at December 31, 2022	**202,559,798**	**38.60**

NOTE 19 Income Taxes

The components of income tax expense for 2022, 2021 and 2020 are presented in the table below.

Income Tax Expense

(Dollars in millions)	2022	2021	2020
Current income tax expense			
U.S. federal	**$ 1,157**	$ 1,076	$ 1,092
U.S. state and local	**389**	775	1,076
Non-U.S.	**1,156**	985	670
Total current expense	**2,702**	2,836	2,838
Deferred income tax expense			
U.S. federal	**110**	962	(799)
U.S. state and local	**254**	491	(233)
Non-U.S.	**375**	(2,291)	(705)
Total deferred expense	**739**	(838)	(1,737)
Total income tax expense	**$ 3,441**	$ 1,998	$ 1,101

Total income tax expense does not reflect the tax effects of items that are included in OCI each period. For more information, see *Note 14 – Accumulated Other Comprehensive Income (Loss)*. Other tax effects included in OCI each period resulted in a benefit of $4.9 billion and $877 million in 2022 and 2021 and an expense of $1.5 billion in 2020.

Income tax expense for 2022, 2021 and 2020 varied from the amount computed by applying the statutory income tax rate to income before income taxes. The Corporation's federal statutory tax rate was 21 percent for 2022, 2021 and 2020. A reconciliation of the expected U.S. federal income tax expense, calculated by applying the federal statutory tax rate, to the Corporation's actual income tax expense, and the effective tax rates for 2022, 2021 and 2020 are presented in the following table.

Reconciliation of Income Tax Expense

(Dollars in millions)	2022 Amount	2022 Percent	2021 Amount	2021 Percent	2020 Amount	2020 Percent
Expected U.S. federal income tax expense	**$ 6,504**	**21.0 %**	$ 7,135	21.0 %	$ 3,989	21.0 %
Increase (decrease) in taxes resulting from:						
State tax expense, net of federal benefit	**756**	**2.4**	1,087	3.2	728	3.8
Affordable housing/energy/other credits	**(3,698)**	**(11.9)**	(3,795)	(11.2)	(2,869)	(15.1)
Tax-exempt income, including dividends	**(273)**	**(0.9)**	(352)	(1.0)	(346)	(1.8)
Changes in prior-period UTBs, including interest	**(273)**	**(0.9)**	(155)	(0.5)	(41)	(0.2)
Rate differential on non-U.S. earnings	**368**	**1.2**	45	0.1	218	1.1
Nondeductible expenses	**352**	**1.1**	206	0.6	324	1.7
Tax law changes	**186**	**0.6**	(2,050)	(6.0)	(699)	(3.7)
Other	**(481)**	**(1.5)**	(123)	(0.3)	(203)	(1.0)
Total income tax expense	**$ 3,441**	**11.1 %**	$ 1,998	5.9 %	$ 1,101	5.8 %

Tax Law changes reflect the impact of the 2022, 2021 and 2020 U.K. enacted corporate income tax rate changes, which resulted in a negative tax adjustment of approximately $186 million in 2022 and positive income tax adjustments of approximately $2.0 billion and $700 million in 2021 and 2020, with corresponding adjustments of U.K. net deferred tax assets. The U.K. net deferred tax assets are primarily net operating losses (NOLs), incurred by the Corporation's U.K. broker-dealer entity in historical periods, which do not expire under U.K. tax law and are assessed regularly for impairment. If further U.K. tax law changes are enacted, a corresponding income tax adjustment will be made based on the amount of available net deferred tax assets and applicable tax rate changes.

Tax credits originate from ESG investments in affordable housing and renewable energy partnerships and similar entities. Significant increases in the tax credits recognized over the last three annual periods have been primarily driven by the Corporation's continued growth in the volume of investments in wind and solar energy production facilities, consistent with the Corporation's commitment to support the transition to a lower carbon economy. For additional information, see *Note 6 – Securitizations and Other Variable Interest Entities*.

The reconciliation of the beginning unrecognized tax benefits (UTB) balance to the ending balance is presented in the table below.

Reconciliation of the Change in Unrecognized Tax Benefits

(Dollars in millions)	2022	2021	2020
Balance, January 1	**$ 1,322**	$ 1,340	$ 1,175
Increases related to positions taken during the current year	**121**	208	238
Increases related to positions taken during prior years [1]	**167**	265	99
Decreases related to positions taken during prior years [1]	**(289)**	(413)	(172)
Settlements	**(99)**	(23)	—
Expiration of statute of limitations	**(166)**	(55)	—
Balance, December 31	**$ 1,056**	$ 1,322	$ 1,340

[1] The sum of the positions taken during prior years differs from the $(273) million, $(155) million and $(41) million in the Reconciliation of Income Tax Expense table due to temporary items, state items and jurisdictional offsets, as well as the inclusion of interest in the Reconciliation of Income Tax Expense table.

At December 31, 2022, 2021 and 2020, the balance of the Corporation's UTBs which would, if recognized, affect the Corporation's effective tax rate was $709 million, $959 million and $976 million, respectively. Included in the UTB balance are some items the recognition of which would not affect the effective tax rate, such as the tax effect of certain temporary differences, the portion of gross state UTBs that would be offset by the tax benefit of the associated federal deduction and the portion of gross non-U.S. UTBs that would be offset by tax reductions in other jurisdictions.

It is reasonably possible that the UTB balance may decrease by as much as $375 million during the next 12 months, since resolved items will be removed from the balance whether their resolution results in payment or recognition.

The Corporation recognized an interest benefit of $50 million in 2022 and interest expense of $32 million and $9 million in 2021 and 2020. At December 31, 2022 and 2021, the Corporation's accrual for interest and penalties that related to income taxes, net of taxes and remittances, was $107 million and $167 million.

The Corporation files income tax returns in more than 100 state and non-U.S. jurisdictions each year. The IRS and other tax authorities in countries and states in which the Corporation has significant business operations examine tax returns periodically (continuously in some jurisdictions). The table below summarizes the status of examinations by major jurisdiction for the Corporation and various subsidiaries at December 31, 2022.

Tax Examination Status

	Years under Examination [1]	Status at December 31 2022
United States	2017-2021	Field Examination
California	2012-2014	Appeals
California	2015-2017	Field Examination
California	2018-2020	To begin in 2023
New York	2019-2021	To begin in 2023
United Kingdom [2]	2019-2020	Field Examination

[1] All tax years subsequent to the years shown remain subject to examination.
[2] Field examination for tax year 2021 to begin in 2023.

Significant components of the Corporation's net deferred tax assets and liabilities at December 31, 2022 and 2021 are presented in the following table.

Deferred Tax Assets and Liabilities

(Dollars in millions)	December 31 2022	2021
Deferred tax assets		
Net operating loss carryforwards	**$ 9,029**	$ 9,360
Security, loan and debt valuations	**4,788**	2,746
Allowance for credit losses	**3,503**	3,097
Lease liability	**2,443**	2,508
Employee compensation and retirement benefits	**1,625**	1,392
Accrued expenses	**1,143**	1,626
Available-for-sale securities	**960**	—
Credit carryforwards	**769**	705
Other	**1,371**	1,160
Gross deferred tax assets	**25,631**	22,594
Valuation allowance	**(2,133)**	(1,988)
Total deferred tax assets, net of valuation allowance	**23,498**	20,606
Deferred tax liabilities		
Equipment lease financing	**2,432**	3,083
Right-of-use asset	**2,303**	2,358
ESG-related tax credit investments	**1,759**	1,387
Fixed Assets	**1,200**	2,082
Available-for-sale securities	**—**	1,016
Other	**2,459**	1,527
Gross deferred tax liabilities	**10,153**	11,453
Net deferred tax assets	**$ 13,345**	$ 9,153

The table below summarizes the deferred tax assets and related valuation allowances recognized for the net operating loss (NOL) and tax credit carryforwards at December 31, 2022.

Net Operating Loss and Tax Credit Carryforward Deferred Tax Assets

(Dollars in millions)	Deferred Tax Asset	Valuation Allowance	Net Deferred Tax Asset	First Year Expiring
Net operating losses - U.K. [1]	$ 7,661	$ —	**$ 7,661**	None
Net operating losses - other non-U.S.	331	(147)	**184**	Various
Net operating losses - U.S. states [2]	1,036	(627)	**409**	Various
Foreign tax credits	769	(769)	**—**	After 2028

(1) Represents U.K. broker-dealer net operating losses that may be carried forward indefinitely.
(2) The net operating losses and related valuation allowances for U.S. states before considering the benefit of federal deductions were $1.3 billion and $794 million.

Management concluded that no valuation allowance was necessary to reduce the deferred tax assets related to the U.K. NOL carryforwards and U.S. federal and certain state NOL carryforwards since estimated future taxable income will be sufficient to utilize these assets prior to their expiration. The majority of the Corporation's U.K. net deferred tax assets, which consist primarily of NOLs, are expected to be realized by certain subsidiaries over an extended number of years. Management's conclusion is supported by financial results, profit forecasts for the relevant entities and the indefinite period to carry forward NOLs. However, a material change in those estimates could lead management to reassess such valuation allowance conclusions.

At December 31, 2022, U.S. federal income taxes had not been provided on approximately $5.0 billion of temporary differences associated with investments in non-U.S. subsidiaries that are essentially permanent in duration. If the Corporation were to record the associated deferred tax liability, the amount would be approximately $1.0 billion.

NOTE 20 Fair Value Measurements

Under applicable accounting standards, fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The Corporation determines the fair values of its financial instruments under applicable accounting standards that require an entity to maximize the use of observable inputs and minimize the use of unobservable inputs. The Corporation categorizes its financial instruments into three levels based on the established fair value hierarchy and conducts a review of fair value hierarchy classifications on a quarterly basis. Transfers into or out of fair value hierarchy classifications are made if the significant inputs used in the financial models measuring the fair values of the assets and liabilities become unobservable or observable in the current marketplace. For more information regarding the fair value hierarchy and how the Corporation measures fair value, see *Note 1 – Summary of Significant Accounting Principles*. The Corporation accounts for certain financial instruments under the fair value option. For more information, see *Note 21 – Fair Value Option.*

Valuation Techniques

The following sections outline the valuation methodologies for the Corporation's assets and liabilities. While the Corporation believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

During 2022, there were no significant changes to valuation approaches or techniques that had, or are expected to have, a material impact on the Corporation's consolidated financial position or results of operations.

Trading Account Assets and Liabilities and Debt Securities

The fair values of trading account assets and liabilities are primarily based on actively traded markets where prices are based on either direct market quotes or observed transactions. The fair values of debt securities are generally based on quoted market prices or market prices for similar assets. Liquidity is a significant factor in the determination of the fair values of trading account assets and liabilities and debt securities. Market price quotes may not be readily available for some positions such as positions within a market sector where trading activity has slowed significantly or ceased. Some of these instruments are valued using a discounted cash flow model, which estimates the fair value of the securities using internal credit risk, and interest rate and prepayment risk models that incorporate management's best estimate of current key assumptions such as default rates, loss severity and prepayment rates. Principal and interest cash flows are discounted using an observable discount rate for similar instruments with adjustments that management believes a market participant would consider in determining fair value for the specific security. Other instruments are valued using a net asset value approach which considers the value of the underlying securities. Underlying assets are valued using external pricing services, where available, or matrix pricing based on the vintages and ratings. Situations of illiquidity generally are triggered by the market's perception of credit uncertainty regarding a single company or a specific market sector. In these instances, fair value is determined based on limited available market information and other factors,

principally from reviewing the issuer's financial statements and changes in credit ratings made by one or more rating agencies.

Derivative Assets and Liabilities

The fair values of derivative assets and liabilities traded in the OTC market are determined using quantitative models that utilize multiple market inputs including interest rates, prices and indices to generate continuous yield or pricing curves and volatility factors to value the position. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services. When third-party pricing services are used, the methods and assumptions are reviewed by the Corporation. Estimation risk is greater for derivative asset and liability positions that are either option-based or have longer maturity dates where observable market inputs are less readily available, or are unobservable, in which case, quantitative-based extrapolations of rate, price or index scenarios are used in determining fair values. The fair values of derivative assets and liabilities include adjustments for market liquidity, counterparty credit quality and other instrument-specific factors, where appropriate. In addition, the Corporation incorporates within its fair value measurements of OTC derivatives a valuation adjustment to reflect the credit risk associated with the net position. Positions are netted by counterparty, and fair value for net long exposures is adjusted for counterparty credit risk while the fair value for net short exposures is adjusted for the Corporation's own credit risk. The Corporation also incorporates FVA within its fair value measurements to include funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives. An estimate of severity of loss is also used in the determination of fair value, primarily based on market data.

Loans and Loan Commitments

The fair values of loans and loan commitments are based on market prices, where available, or discounted cash flow analyses using market-based credit spreads of comparable debt instruments or credit derivatives of the specific borrower or comparable borrowers. Results of discounted cash flow analyses may be adjusted, as appropriate, to reflect other market conditions or the perceived credit risk of the borrower.

Mortgage Servicing Rights

The fair values of MSRs are primarily determined using an option-adjusted spread valuation approach, which factors in prepayment risk to determine the fair value of MSRs. This approach consists of projecting servicing cash flows under multiple interest rate scenarios and discounting these cash flows using risk-adjusted discount rates.

Loans Held-for-sale

The fair values of LHFS are based on quoted market prices, where available, or are determined by discounting estimated cash flows using interest rates approximating the Corporation's current origination rates for similar loans adjusted to reflect the inherent credit risk. The borrower-specific credit risk is embedded within the quoted market prices or is implied by considering loan performance when selecting comparables.

Short-term Borrowings and Long-term Debt

The Corporation issues structured liabilities that have coupons or repayment terms linked to the performance of debt or equity securities, interest rates, indices, currencies or commodities. The fair values of these structured liabilities are estimated using quantitative models for the combined derivative and debt portions of the notes. These models incorporate observable and, in some instances, unobservable inputs including security prices, interest rate yield curves, option volatility, currency, commodity or equity rates and correlations among these inputs. The Corporation also considers the impact of its own credit spread in determining the discount rate used to value these liabilities. The credit spread is determined by reference to observable spreads in the secondary bond market.

Securities Financing Agreements

The fair values of certain reverse repurchase agreements, repurchase agreements and securities borrowed transactions are determined using quantitative models, including discounted cash flow models that require the use of multiple market inputs including interest rates and spreads to generate continuous yield or pricing curves, and volatility factors. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services.

Deposits

The fair values of deposits are determined using quantitative models, including discounted cash flow models that require the use of multiple market inputs including interest rates and spreads to generate continuous yield or pricing curves, and volatility factors. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services. The Corporation considers the impact of its own credit spread in the valuation of these liabilities. The credit risk is determined by reference to observable credit spreads in the secondary cash market.

Asset-backed Secured Financings

The fair values of asset-backed secured financings are based on external broker bids, where available, or are determined by discounting estimated cash flows using interest rates approximating the Corporation's current origination rates for similar loans adjusted to reflect the inherent credit risk.

Recurring Fair Value

Assets and liabilities carried at fair value on a recurring basis at December 31, 2022 and 2021, including financial instruments that the Corporation accounts for under the fair value option, are summarized in the following tables.

	December 31, 2022				
	Fair Value Measurements				
(Dollars in millions)	Level 1	Level 2	Level 3	Netting Adjustments [1]	Assets/Liabilities at Fair Value
Assets					
Time deposits placed and other short-term investments	$ 868	$ —	$ —	$ —	$ 868
Federal funds sold and securities borrowed or purchased under agreements to resell	—	146,999	—	—	146,999
Trading account assets:					
U.S. Treasury and government agencies	58,894	212	—	—	59,106
Corporate securities, trading loans and other	—	46,897	2,384	—	49,281
Equity securities	77,868	35,065	145	—	113,078
Non-U.S. sovereign debt	7,392	26,306	518	—	34,216
Mortgage trading loans, MBS and ABS:					
U.S. government-sponsored agency guaranteed	—	28,563	34	—	28,597
Mortgage trading loans, ABS and other MBS	—	10,312	1,518	—	11,830
Total trading account assets [2]	144,154	147,355	4,599	—	296,108
Derivative assets	14,775	380,380	3,213	(349,726)	48,642
AFS debt securities:					
U.S. Treasury and government agencies	158,102	920	—	—	159,022
Mortgage-backed securities:					
Agency	—	23,442	—	—	23,442
Agency-collateralized mortgage obligations	—	2,221	—	—	2,221
Non-agency residential	—	128	258	—	386
Commercial	—	6,407	—	—	6,407
Non-U.S. securities	—	13,212	195	—	13,407
Other taxable securities	—	4,645	—	—	4,645
Tax-exempt securities	—	11,207	51	—	11,258
Total AFS debt securities	158,102	62,182	504	—	220,788
Other debt securities carried at fair value:					
U.S. Treasury and government agencies	561	—	—	—	561
Non-agency residential MBS	—	248	119	—	367
Non-U.S. and other securities	3,027	5,251	—	—	8,278
Total other debt securities carried at fair value	3,588	5,499	119	—	9,206
Loans and leases	—	5,518	253	—	5,771
Loans held-for-sale	—	883	232	—	1,115
Other assets [3]	6,898	897	1,799	—	9,594
Total assets [4]	$ 328,385	$ 749,713	$ 10,719	$ (349,726)	$ 739,091
Liabilities					
Interest-bearing deposits in U.S. offices	$ —	$ 311	$ —	$ —	$ 311
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	151,708	—	—	151,708
Trading account liabilities:					
U.S. Treasury and government agencies	13,906	181	—	—	14,087
Equity securities	36,937	4,825	—	—	41,762
Non-U.S. sovereign debt	9,636	8,228	—	—	17,864
Corporate securities and other	—	6,628	58	—	6,686
Total trading account liabilities	60,479	19,862	58	—	80,399
Derivative liabilities	15,431	376,979	6,106	(353,700)	44,816
Short-term borrowings	—	818	14	—	832
Accrued expenses and other liabilities	7,458	2,262	32	—	9,752
Long-term debt	—	32,208	862	—	33,070
Total liabilities [4]	$ 83,368	$ 584,148	$ 7,072	$ (353,700)	$ 320,888

(1) Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
(2) Includes securities with a fair value of $16.6 billion that were segregated in compliance with securities regulations or deposited with clearing organizations. This amount is included in the parenthetical disclosure on the Consolidated Balance Sheet. Trading account assets also includes certain commodities inventory of $40 million that is accounted for at the lower of cost or net realizable value, which is the current selling price less any costs to sell.
(3) Includes MSRs of $1.0 billion, which are classified as Level 3 assets.
(4) Total recurring Level 3 assets were 0.35 percent of total consolidated assets, and total recurring Level 3 liabilities were 0.25 percent of total consolidated liabilities.

(Dollars in millions)	December 31, 2021				
	Fair Value Measurements				
	Level 1	Level 2	Level 3	Netting Adjustments [1]	Assets/Liabilities at Fair Value
Assets					
Time deposits placed and other short-term investments	$ 707	$ —	$ —	$ —	$ 707
Federal funds sold and securities borrowed or purchased under agreements to resell	—	150,665	—	—	150,665
Trading account assets:					
U.S. Treasury and government agencies	44,599	803	—	—	45,402
Corporate securities, trading loans and other	—	31,601	2,110	—	33,711
Equity securities	61,425	38,383	190	—	99,998
Non-U.S. sovereign debt	3,822	25,612	396	—	29,830
Mortgage trading loans, MBS and ABS:					
U.S. government-sponsored agency guaranteed	—	25,645	109	—	25,754
Mortgage trading loans, ABS and other MBS	—	10,967	1,418	—	12,385
Total trading account assets [2]	109,846	133,011	4,223	—	247,080
Derivative assets	34,748	310,581	3,133	(313,118)	35,344
AFS debt securities:					
U.S. Treasury and government agencies	198,071	1,074	—	—	199,145
Mortgage-backed securities:					
Agency	—	46,339	—	—	46,339
Agency-collateralized mortgage obligations	—	3,380	—	—	3,380
Non-agency residential	—	267	316	—	583
Commercial	—	19,604	—	—	19,604
Non-U.S. securities	—	11,933	—	—	11,933
Other taxable securities	—	2,690	71	—	2,761
Tax-exempt securities	—	15,381	52	—	15,433
Total AFS debt securities	198,071	100,668	439	—	299,178
Other debt securities carried at fair value:					
U.S. Treasury and government agencies	575	—	—	—	575
Non-agency residential MBS	—	343	242	—	585
Non-U.S. and other securities	2,580	5,155	—	—	7,735
Total other debt securities carried at fair value	3,155	5,498	242	—	8,895
Loans and leases	—	7,071	748	—	7,819
Loans held-for-sale	—	4,138	317	—	4,455
Other assets [3]	7,657	2,915	1,572	—	12,144
Total assets [4]	$ 354,184	$ 714,547	$ 10,674	$ (313,118)	$ 766,287
Liabilities					
Interest-bearing deposits in U.S. offices	$ —	$ 408	$ —	$ —	$ 408
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	139,641	—	—	139,641
Trading account liabilities:					
U.S. Treasury and government agencies	19,826	313	—	—	20,139
Equity securities	41,744	6,491	—	—	48,235
Non-U.S. sovereign debt	10,400	13,781	—	—	24,181
Corporate securities and other	—	8,124	11	—	8,135
Total trading account liabilities	71,970	28,709	11	—	100,690
Derivative liabilities	35,282	314,380	5,795	(317,782)	37,675
Short-term borrowings	—	4,279	—	—	4,279
Accrued expenses and other liabilities	8,359	3,130	—	—	11,489
Long-term debt	—	28,633	1,075	—	29,708
Total liabilities [4]	$ 115,611	$ 519,180	$ 6,881	$ (317,782)	$ 323,890

(1) Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
(2) Includes securities with a fair value of $10.6 billion that were segregated in compliance with securities regulations or deposited with clearing organizations. This amount is included in the parenthetical disclosure on the Consolidated Balance Sheet. Trading account assets also includes certain commodities inventory of $752 million that is accounted for at the lower of cost or net realizable value, which is the current selling price less any costs to sell.
(3) Includes MSRs of $818 million, which are classified as Level 3 assets.
(4) Total recurring Level 3 assets were 0.34 percent of total consolidated assets, and total recurring Level 3 liabilities were 0.24 percent of total consolidated liabilities.

The following tables present a reconciliation of all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during 2022, 2021 and 2020, including net realized and unrealized gains (losses) included in earnings and accumulated OCI. Transfers into Level 3 occur primarily due to decreased price observability, and transfers out of Level 3 occur primarily due to increased price observability. Transfers occur on a regular basis for long-term debt instruments due to changes in the impact of unobservable inputs on the value of the embedded derivative in relation to the instrument as a whole.

Level 3 – Fair Value Measurements [1]

	Balance January 1	Total Realized/ Unrealized Gains (Losses) in Net Income [2]	Gains (Losses) in OCI [3]	Gross Purchases	Gross Sales	Gross Issuances	Gross Settlements	Gross Transfers into Level 3	Gross Transfers out of Level 3	Balance December 31	Change in Unrealized Gains (Losses) in Net Income Related to Financial Instruments Still Held [2]
Year Ended December 31, 2022											
Trading account assets:											
Corporate securities, trading loans and other	**2,110**	**(52)**	**(2)**	**1,069**	**(384)**	**—**	**(606)**	**1,023**	**(774)**	**2,384**	**(78)**
Equity securities	**190**	**(3)**	**—**	**45**	**(25)**	**—**	**(4)**	**38**	**(96)**	**145**	**(6)**
Non-U.S. sovereign debt	**396**	**59**	**16**	**54**	**(4)**	**—**	**(68)**	**75**	**(10)**	**518**	**56**
Mortgage trading loans, MBS and ABS	**1,527**	**(254)**	**—**	**729**	**(665)**	**—**	**(112)**	**536**	**(209)**	**1,552**	**(152)**
Total trading account assets	**4,223**	**(250)**	**14**	**1,897**	**(1,078)**	**—**	**(790)**	**1,672**	**(1,089)**	**4,599**	**(180)**
Net derivative assets (liabilities) [4]	**(2,662)**	**551**	**—**	**319**	**(830)**	**—**	**294**	**(180)**	**(385)**	**(2,893)**	**259**
AFS debt securities:											
Non-agency residential MBS	**316**	**—**	**(35)**	**—**	**(8)**	**—**	**(75)**	**73**	**(13)**	**258**	**—**
Non-U.S. and other taxable securities	**71**	**10**	**(10)**	**126**	**—**	**—**	**(22)**	**311**	**(291)**	**195**	**1**
Tax-exempt securities	**52**	**—**	**1**	**—**	**—**	**—**	**(3)**	**1**	**—**	**51**	**—**
Total AFS debt securities	**439**	**10**	**(44)**	**126**	**(8)**	**—**	**(100)**	**385**	**(304)**	**504**	**1**
Other debt securities carried at fair value – Non-agency residential MBS	**242**	**(19)**	**—**	**—**	**—**	**—**	**(111)**	**30**	**(23)**	**119**	**14**
Loans and leases [5,6]	**748**	**(45)**	**—**	**—**	**(154)**	**82**	**(129)**	**—**	**(249)**	**253**	**(21)**
Loans held-for-sale [5,6]	**317**	**9**	**4**	**171**	**(6)**	**—**	**(271)**	**8**	**—**	**232**	**19**
Other assets [6,7]	**1,572**	**305**	**(21)**	**39**	**(35)**	**208**	**(271)**	**5**	**(3)**	**1,799**	**213**
Trading account liabilities – Corporate securities and other	**(11)**	**5**	**—**	**(4)**	**—**	**—**	**(2)**	**(46)**	**—**	**(58)**	**1**
Short-term borrowings [5]	**—**	**3**	**—**	**—**	**(17)**	**—**	**—**	**(3)**	**3**	**(14)**	**2**
Accrued expenses and other liabilities [5]	**—**	**(23)**	**—**	**(9)**	**—**	**—**	**—**	**—**	**—**	**(32)**	**(7)**
Long-term debt [5]	**(1,075)**	**(197)**	**82**	**—**	**14**	**(1)**	**57**	**(24)**	**282**	**(862)**	**(200)**
Year Ended December 31, 2021											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,359	$ (17)	$ —	$ 765	$ (437)	$ —	$ (327)	$ 1,218	$ (451)	$ 2,110	$ (79)
Equity securities	227	(18)	—	103	(68)	—	—	112	(166)	190	(44)
Non-U.S. sovereign debt	354	31	(20)	18	—	—	(13)	26	—	396	34
Mortgage trading loans, MBS and ABS	1,440	(58)	—	518	(721)	7	(167)	771	(263)	1,527	(91)
Total trading account assets	3,380	(62)	(20)	1,404	(1,226)	7	(507)	2,127	(880)	4,223	(180)
Net derivative assets (liabilities) [4]	(3,468)	927	—	521	(653)	—	293	(74)	(208)	(2,662)	800
AFS debt securities:											
Non-agency residential MBS	378	(11)	(111)	—	(98)	—	(45)	304	(101)	316	8
Non-U.S. and other taxable securities	89	(4)	(7)	8	(10)	—	(4)	—	(1)	71	—
Tax-exempt securities	176	20	—	—	—	—	(2)	—	(142)	52	(19)
Total AFS debt securities	643	5	(118)	8	(108)	—	(51)	304	(244)	439	(11)
Other debt securities carried at fair value – Non-agency residential MBS	267	1	—	—	(45)	—	(37)	101	(45)	242	10
Loans and leases [5,6]	717	62	—	59	(13)	70	(180)	46	(13)	748	65
Loans held-for-sale [5,6]	236	13	(6)	132	(1)	—	(79)	26	(4)	317	18
Other assets [6,7]	1,970	7	3	26	(202)	144	(383)	9	(2)	1,572	3
Trading account liabilities – Corporate securities and other	(16)	6	—	—	—	(1)	—	—	—	(11)	—
Long-term debt [5]	(1,164)	(92)	13	(6)	15	(12)	98	(65)	138	(1,075)	(113)

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.

(2) Includes gains (losses) reported in earnings in the following income statement line items: Trading account assets/liabilities - predominantly market making and similar activities; Net derivative assets (liabilities) - market making and similar activities and other income; AFS debt securities - other income; Other debt securities carried at fair value - other income; Loans and leases - market making and similar activities and other income; Loans held-for-sale - other income; Other assets - market making and similar activities and other income related to MSRs; Short-term borrowings - market making and similar activities; Accrued expenses and other liabilities - market making and similar activities and other income; Long-term debt - market making and similar activities.

(3) Includes unrealized gains (losses) in OCI on AFS debt securities, foreign currency translation adjustments and the impact of changes in the Corporation's credit spreads on long-term debt accounted for under the fair value option. Amounts include net unrealized gains (losses) of $28 million and $(19) million related to financial instruments still held at December 31, 2022 and 2021.

(4) Net derivative assets (liabilities) include derivative assets of $3.2 billion and $3.1 billion and derivative liabilities of $6.1 billion and $5.8 billion at December 31, 2022 and 2021.

(5) Amounts represent instruments that are accounted for under the fair value option.

(6) Issuances represent loan originations and MSRs recognized following securitizations or whole-loan sales.

(7) Settlements primarily represent the net change in fair value of the MSR asset due to the recognition of modeled cash flows and the passage of time.

Level 3 – Fair Value Measurements [1]

(Dollars in millions)	Balance January 1	Total Realized/ Unrealized Gains (Losses) in Net Income [2]	Gains (Losses) in OCI [3]	Gross Purchases	Gross Sales	Gross Issuances	Gross Settlements	Gross Transfers into Level 3	Gross Transfers out of Level 3	Balance December 31	Change in Unrealized Gains (Losses) in Net Income Related to Financial Instruments Still Held [2]
Year Ended December 31, 2020											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,507	$ (138)	$ (1)	$ 430	$ (242)	$ 10	$ (282)	$ 639	$ (564)	$ 1,359	$ (102)
Equity securities	239	(43)	—	78	(53)	—	(3)	58	(49)	227	(31)
Non-U.S. sovereign debt	482	45	(46)	76	(61)	—	(39)	150	(253)	354	47
Mortgage trading loans, MBS and ABS	1,553	(120)	(3)	577	(746)	11	(96)	757	(493)	1,440	(92)
Total trading account assets	3,781	(256)	(50)	1,161	(1,102)	21	(420)	1,604	(1,359)	3,380	(178)
Net derivative assets (liabilities) [4]	(2,538)	(235)	—	120	(646)	—	(112)	(235)	178	(3,468)	(953)
AFS debt securities:											
Non-agency residential MBS	424	(2)	3	23	(54)	—	(44)	158	(130)	378	(2)
Non-U.S. and other taxable securities	67	1	—	9	(5)	—	(1)	18	—	89	1
Tax-exempt securities	108	(21)	3	—	—	—	(169)	265	(10)	176	(20)
Total AFS debt securities	599	(22)	6	32	(59)	—	(214)	441	(140)	643	(21)
Other debt securities carried at fair value - Non-agency residential MBS	299	26	—	—	(180)	—	(24)	190	(44)	267	3
Loans and leases [5,6]	693	(4)	—	145	(76)	22	(161)	98	—	717	9
Loans held-for-sale [5,6]	375	26	(28)	—	(489)	691	(119)	93	(313)	236	(5)
Other assets [6,7]	2,360	(288)	3	178	(4)	224	(506)	5	(2)	1,970	(374)
Trading account liabilities – Equity securities	(2)	1	—	—	—	—	—	—	1	—	—
Trading account liabilities – Corporate securities and other	(15)	8	—	(7)	(3)	—	1	—	—	(16)	—
Long-term debt [5]	(1,149)	(46)	2	(104)	—	(47)	218	(52)	14	(1,164)	(5)

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.
(2) Includes gains/losses reported in earnings in the following income statement line items: Trading account assets/liabilities - predominantly market making and similar activities; Net derivative assets (liabilities) - market making and similar activities and other income; AFS debt securities - other income; Other debt securities carried at fair value - other income; Loans and leases - market making and similar activities and other income; Loans held-for-sale - other income; Other assets - market making and similar activities and other income related to MSRs; Long-term debt - market making and similar activities.
(3) Includes unrealized losses in OCI on AFS debt securities, foreign currency translation adjustments and the impact of changes in the Corporation's credit spreads on long-term debt accounted for under the fair value option. Amounts include net unrealized losses of $41 million related to financial instruments still held at December 31, 2020.
(4) Net derivative assets (liabilities) include derivative assets of $2.8 billion and derivative liabilities of $6.2 billion.
(5) Amounts represent instruments that are accounted for under the fair value option.
(6) Issuances represent loan originations and MSRs recognized following securitizations or whole-loan sales.
(7) Settlements primarily represent the net change in fair value of the MSR asset due to the recognition of modeled cash flows and the passage of time.

The following tables present information about significant unobservable inputs related to the Corporation's material categories of Level 3 financial assets and liabilities at December 31, 2022 and 2021.

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2022

(Dollars in millions)

Financial Instrument	Fair Value	Valuation Technique	Inputs: Significant Unobservable Inputs	Inputs: Ranges of Inputs	Inputs: Weighted Average [1]
Loans and Securities [2]					
Instruments backed by residential real estate assets	**$ 852**	Discounted cash flow, Market comparables	Yield	0% to 25%	10%
Trading account assets – Mortgage trading loans, MBS and ABS	338		Prepayment speed	0% to 29% CPR	12% CPR
Loans and leases	137		Default rate	0% to 3% CDR	1% CDR
AFS debt securities – Non-agency residential	258		Price	$0 to $111	$26
Other debt securities carried at fair value – Non-agency residential	119		Loss severity	0% to 100%	24%
Instruments backed by commercial real estate assets	**$ 362**	Discounted cash flow	Yield	0% to 25%	10%
Trading account assets – Corporate securities, trading loans and other	292		Price	$0 to $100	$75
Trading account assets – Mortgage trading loans, MBS and ABS	66				
Loans held-for-sale	4				
Commercial loans, debt securities and other	**$ 4,348**	Discounted cash flow, Market comparables	Yield	5% to 43%	15%
Trading account assets – Corporate securities, trading loans and other	2,092		Prepayment speed	10% to 20%	15%
Trading account assets – Non-U.S. sovereign debt	518		Default rate	3% to 4%	4%
Trading account assets – Mortgage trading loans, MBS and ABS	1,148		Loss severity	35% to 40%	38%
AFS debt securities – Tax-exempt securities	51		Price	$0 to $157	$75
AFS debt securities – Non-U.S. and other taxable securities	195				
Loans and leases	116				
Loans held-for-sale	228				
Other assets, primarily auction rate securities	**$ 779**	Discounted cash flow, Market comparables	Price	$10 to $97	$94
			Discount rate	11%	n/a
MSRs	**$ 1,020**	Discounted cash flow	Weighted-average life, fixed rate [5]	0 to 14 years	6 years
			Weighted-average life, variable rate [5]	0 to 12 years	4 years
			Option-adjusted spread, fixed rate	7% to 14%	9%
			Option-adjusted spread, variable rate	9% to 15%	12%
Structured liabilities					
Long-term debt	**$ (862)**	Discounted cash flow, Market comparables, Industry standard derivative pricing [3]	Yield	22% to 43%	23%
			Equity correlation	0% to 95%	69%
			Price	$0 to $119	$90
			Natural gas forward price	$3/MMBtu to $13/MMBtu	$9 /MMBtu
Net derivative assets (liabilities)					
Credit derivatives	**$ (44)**	Discounted cash flow, Stochastic recovery correlation model	Credit spreads	3 to 63 bps	22 bps
			Upfront points	0 to 100 points	83 points
			Prepayment speed	15% CPR	n/a
			Default rate	2% CDR	n/a
			Credit correlation	18% to 53%	44%
			Price	$0 to $151	$63
Equity derivatives	**$ (1,534)**	Industry standard derivative pricing [3]	Equity correlation	0% to 100%	73%
			Long-dated equity volatilities	4% to 101%	44%
Commodity derivatives	**$ (291)**	Discounted cash flow, Industry standard derivative pricing [3]	Natural gas forward price	$3/MMBtu to $13/MMBtu	$8 /MMBtu
			Power forward price	$9 to $123	$43
Interest rate derivatives	**$ (1,024)**	Industry standard derivative pricing [4]	Correlation (IR/IR)	(35)% to 89%	67%
			Correlation (FX/IR)	11% to 58%	43%
			Long-dated inflation rates	0% to 39%	1%
			Long-dated inflation volatilities	0% to 5%	2%
			Interest rate volatilities	0% to 2%	1%
Total net derivative assets (liabilities)	**$ (2,893)**				

[1] For loans and securities, structured liabilities and net derivative assets (liabilities), the weighted average is calculated based upon the absolute fair value of the instruments.
[2] The categories are aggregated based upon product type which differs from financial statement classification. The following is a reconciliation to the line items in the table on page 150: Trading account assets – Corporate securities, trading loans and other of $2.4 billion, Trading account assets – Non-U.S. sovereign debt of $518 million, Trading account assets – Mortgage trading loans, MBS and ABS of $1.6 billion, AFS debt securities of $504 million, Other debt securities carried at fair value - Non-agency residential of $119 million, Other assets, including MSRs, of $1.8 billion, Loans and leases of $253 million and LHFS of $232 million.
[3] Includes models such as Monte Carlo simulation and Black-Scholes.
[4] Includes models such as Monte Carlo simulation, Black-Scholes and other methods that model the joint dynamics of interest, inflation and foreign exchange rates.
[5] The weighted-average life is a product of changes in market rates of interest, prepayment rates and other model and cash flow assumptions.

CPR = Constant Prepayment Rate
CDR = Constant Default Rate
MMBtu = Million British thermal units
IR = Interest Rate
FX = Foreign Exchange
n/a = not applicable

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2021

(Dollars in millions)

Financial Instrument	Fair Value	Valuation Technique	Inputs: Significant Unobservable Inputs	Inputs: Ranges of Inputs	Inputs: Weighted Average [1]
Loans and Securities [2]					
Instruments backed by residential real estate assets	**$ 1,269**	Discounted cash flow, Market comparables	Yield	0% to 25%	6%
Trading account assets – Mortgage trading loans, MBS and ABS	338		Prepayment speed	1% to 40% CPR	19% CPR
Loans and leases	373		Default rate	0% to 3% CDR	1% CDR
AFS debt securities - Non-agency residential	316		Price	$0 to $168	$92
Other debt securities carried at fair value - Non-agency residential	242		Loss severity	0% to 43%	13%
Instruments backed by commercial real estate assets	**$ 298**	Discounted cash flow	Yield	0% to 25%	4%
Trading account assets – Corporate securities, trading loans and other	138		Price	$0 to $101	$57
Trading account assets – Mortgage trading loans, MBS and ABS	77				
AFS debt securities – Non-U.S. and other taxable securities	71				
Loans held-for-sale	12				
Commercial loans, debt securities and other	**$ 4,212**	Discounted cash flow, Market comparables	Yield	0% to 19%	10%
Trading account assets – Corporate securities, trading loans and other	1,972		Prepayment speed	10% to 20%	16%
Trading account assets – Non-U.S. sovereign debt	396		Default rate	3% to 4%	4%
Trading account assets – Mortgage trading loans, MBS and ABS	1,112		Loss severity	35% to 40%	37%
AFS debt securities – Tax-exempt securities	52		Price	$0 to $189	$73
Loans and leases	375		Long-dated equity volatilities	45%	n/a
Loans held-for-sale	305				
Other assets, primarily auction rate securities	**$ 754**	Discounted cash flow, Market comparables	Price	$10 to $96	$91
			Discount rate	9%	n/a
MSRs	**$ 818**	Discounted cash flow	Weighted-average life, fixed rate [5]	0 to 14 years	4 years
			Weighted-average life, variable rate [5]	0 to 10 years	3 years
			Option-adjusted spread, fixed rate	7% to 14%	9%
			Option-adjusted spread, variable rate	9% to 15%	12%
Structured liabilities					
Long-term debt	**$ (1,075)**	Discounted cash flow, Market comparables, Industry standard derivative pricing [3]	Yield	0% to 19%	18%
			Equity correlation	3% to 100%	80%
			Long-dated equity volatilities	5% to 78%	36%
			Price	$0 to $125	$82
			Natural gas forward price	$2/MMBtu to $8/MMBtu	$4/MMBtu
Net derivative assets (liabilities)					
Credit derivatives	**$ (104)**	Discounted cash flow, Stochastic recovery correlation model	Credit spreads	7 to 155 bps	61 bps
			Upfront points	16 to 100 points	68 points
			Prepayment speed	15% CPR	n/a
			Default rate	2% CDR	n/a
			Credit correlation	20% to 60%	55%
			Price	$0 to $120	$53
Equity derivatives	**$ (1,710)**	Industry standard derivative pricing [3]	Equity correlation	3% to 100%	80%
			Long-dated equity volatilities	5% to 78%	36%
Commodity derivatives	**$ (976)**	Discounted cash flow, Industry standard derivative pricing [3]	Natural gas forward price	$2/MMBtu to $8/MMBtu	$4/MMBtu
			Correlation	65% to 85%	76%
			Power forward price	$11 to $103	$32
			Volatilities	41% to 69%	63%
Interest rate derivatives	**$ 128**	Industry standard derivative pricing [4]	Correlation (IR/IR)	(1)% to 90%	54%
			Correlation (FX/IR)	(1)% to 58%	44%
			Long-dated inflation rates	(10)% to 11%	3%
			Long-dated inflation volatilities	0% to 2%	2%
			Interest rates volatilities	0% to 2%	1%
Total net derivative assets (liabilities)	**$ (2,662)**				

(1) For loans and securities, structured liabilities and net derivative assets (liabilities), the weighted average is calculated based upon the absolute fair value of the instruments.

(2) The categories are aggregated based upon product type which differs from financial statement classification. The following is a reconciliation to the line items in the table on page 151: Trading account assets – Corporate securities, trading loans and other of $2.1 billion, Trading account assets – Non-U.S. sovereign debt of $396 million, Trading account assets – Mortgage trading loans, MBS and ABS of $1.5 billion, AFS debt securities of $439 million, Other debt securities carried at fair value - Non-agency residential of $242 million, Other assets, including MSRs, of $1.6 billion, Loans and leases of $748 million and LHFS of $317 million.

(3) Includes models such as Monte Carlo simulation and Black-Scholes.

(4) Includes models such as Monte Carlo simulation, Black-Scholes and other methods that model the joint dynamics of interest, inflation and foreign exchange rates.

(5) The weighted-average life is a product of changes in market rates of interest, prepayment rates and other model and cash flow assumptions.

CPR = Constant Prepayment Rate
CDR = Constant Default Rate
MMBtu = Million British thermal units
IR = Interest Rate
FX = Foreign Exchange
n/a = not applicable

In the previous tables, instruments backed by residential and commercial real estate assets include RMBS, commercial MBS, whole loans and mortgage CDOs. Commercial loans, debt securities and other include corporate CLOs and CDOs, commercial loans and bonds, and securities backed by non-real estate assets. Structured liabilities primarily include equity-linked notes that are accounted for under the fair value option.

The Corporation uses multiple market approaches in valuing certain of its Level 3 financial instruments. For example, market comparables and discounted cash flows are used together. For a given product, such as corporate debt securities, market comparables may be used to estimate some of the unobservable inputs, and then these inputs are incorporated into a discounted cash flow model. Therefore, the balances disclosed encompass both of these techniques.

The levels of aggregation and diversity within the products disclosed in the tables result in certain ranges of inputs being wide and unevenly distributed across asset and liability categories.

Uncertainty of Fair Value Measurements from Unobservable Inputs

Loans and Securities

A significant increase in market yields, default rates, loss severities or duration would have resulted in a significantly lower fair value for long positions. Short positions would have been impacted in a directionally opposite way. The impact of changes in prepayment speeds would have resulted in differing impacts depending on the seniority of the instrument and, in the case of CLOs, whether prepayments can be reinvested. A significant increase in price would have resulted in a significantly higher fair value for long positions, and short positions would have been impacted in a directionally opposite way.

Structured Liabilities and Derivatives

For credit derivatives, a significant increase in market yield, upfront points (i.e., a single upfront payment made by a protection buyer at inception), credit spreads, default rates or loss severities would have resulted in a significantly lower fair value for protection sellers and higher fair value for protection buyers. The impact of changes in prepayment speeds would have resulted in differing impacts depending on the seniority of the instrument.

Structured credit derivatives are impacted by credit correlation. Default correlation is a parameter that describes the degree of dependence among credit default rates within a credit portfolio that underlies a credit derivative instrument. The sensitivity of this input on the fair value varies depending on the level of subordination of the tranche. For senior tranches that are net purchases of protection, a significant increase in default correlation would have resulted in a significantly higher fair value. Net short protection positions would have been impacted in a directionally opposite way.

For equity derivatives, commodity derivatives, interest rate derivatives and structured liabilities, a significant change in long-dated rates and volatilities and correlation inputs (i.e., the degree of correlation between an equity security and an index, between two different commodities, between two different interest rates, or between interest rates and foreign exchange rates) would have resulted in a significant impact to the fair value; however, the magnitude and direction of the impact depend on whether the Corporation is long or short the exposure. For structured liabilities, a significant increase in yield or decrease in price would have resulted in a significantly lower fair value.

Nonrecurring Fair Value

The Corporation holds certain assets that are measured at fair value only in certain situations (e.g., the impairment of an asset), and these measurements are referred to herein as nonrecurring. The amounts below represent assets still held as of the reporting date for which a nonrecurring fair value adjustment was recorded during 2022, 2021, and 2020.

Assets Measured at Fair Value on a Nonrecurring Basis

(Dollars in millions)	December 31, 2022 Level 2	December 31, 2022 Level 3	December 31, 2021 Level 2	December 31, 2021 Level 3
Assets				
Loans held-for-sale	**$ 1,979**	**$ 3,079**	$ 634	$ 24
Loans and leases [1]	**—**	**166**	—	213
Foreclosed properties [2, 3]	**—**	**7**	—	5
Other assets	**88**	**165**	256	2,046

	Gains (Losses) 2022	2021	2020
Assets			
Loans held-for-sale	**$ (387)**	$ (44)	$ (79)
Loans and leases [1]	**(48)**	(60)	(73)
Foreclosed properties	**(6)**	(2)	(6)
Other assets	**(91)**	(492)	(98)

[1] Includes $15 million, $24 million and $30 million of losses on loans that were written down to a collateral value of zero during 2022, 2021 and 2020, respectively.
[2] Amounts are included in other assets on the Consolidated Balance Sheet and represent the carrying value of foreclosed properties that were written down subsequent to their initial classification as foreclosed properties. Losses on foreclosed properties include losses recorded during the first 90 days after transfer of a loan to foreclosed properties.
[3] Excludes $60 million and $52 million of properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans) at December 31, 2022 and 2021.

The table below presents information about significant unobservable inputs utilized in the Corporation's nonrecurring Level 3 fair value measurements at December 31, 2022 and 2021.

Quantitative Information about Nonrecurring Level 3 Fair Value Measurements

Financial Instrument	Fair Value	Valuation Technique	Inputs: Significant Unobservable Inputs	Inputs: Ranges of Inputs	Inputs: Weighted Average [1]
(Dollars in millions)			Year Ended December 31, 2022		
Loans held-for-sale	$ 3,079	Pricing model	Implied yield	9% to 24%	n/a
Loans and leases [2]	166	Market comparables	OREO discount	10% to 66%	26%
			Costs to sell	8% to 24%	9%
Other assets [3]	165	Discounted cash flow	Discount rate	7%	n/a
			Year Ended December 31, 2021		
Loans and leases [2]	$ 213	Market comparables	OREO discount	13% to 59%	24%
			Costs to sell	8% to 26%	9%
Other assets [4]	1,875	Discounted cash flow	Discount rate	7%	n/a
	166	Market comparables	Estimated appraisal value	n/a	n/a

[1] The weighted average is calculated based upon the fair value of the loans.
[2] Represents residential mortgages where the loan has been written down to the fair value of the underlying collateral.
[3] Represents the fair value of certain impaired renewable energy investments.
[4] Represents the fair value of certain impaired renewable energy investments and impaired assets related to the Corporation's real estate rationalization.
n/a = not applicable

NOTE 21 Fair Value Option

Loans and Loan Commitments

The Corporation elects to account for certain loans and loan commitments that exceed the Corporation's single-name credit risk concentration guidelines under the fair value option. Lending commitments are actively managed and, as appropriate, credit risk for these lending relationships may be mitigated through the use of credit derivatives, with the Corporation's public side credit view and market perspectives determining the size and timing of the hedging activity. These credit derivatives do not meet the requirements for designation as accounting hedges and are carried at fair value. The fair value option allows the Corporation to carry these loans and loan commitments at fair value, which is more consistent with management's view of the underlying economics and the manner in which they are managed. In addition, the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the credit derivatives at fair value.

Loans Held-for-sale

The Corporation elects to account for residential mortgage LHFS, commercial mortgage LHFS and certain other LHFS under the fair value option. These loans are actively managed and monitored and, as appropriate, certain market risks of the loans may be mitigated through the use of derivatives. The Corporation has elected not to designate the derivatives as qualifying accounting hedges, and therefore, they are carried at fair value. The changes in fair value of the loans are largely offset by changes in the fair value of the derivatives. The fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at the lower of cost or fair value and the derivatives at fair value. The Corporation has not elected to account for certain other LHFS under the fair value option primarily because these loans are floating-rate loans that are not hedged using derivative instruments.

Loans Reported as Trading Account Assets

The Corporation elects to account for certain loans that are held for the purpose of trading and are risk-managed on a fair value basis under the fair value option.

Other Assets

The Corporation elects to account for certain long-term fixed-rate margin loans that are hedged with derivatives under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the derivatives at fair value.

Securities Financing Agreements

The Corporation elects to account for certain securities financing agreements, including resale and repurchase agreements, under the fair value option. These elections include certain agreements collateralized by the U.S. government and its agencies, which are generally short-dated and have minimal interest rate risk.

Long-term Deposits

The Corporation elects to account for certain long-term fixed-rate and rate-linked deposits that are hedged with derivatives that do not qualify for hedge accounting. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the derivatives at fair value. The Corporation has not elected to carry other long-term deposits at fair value because they are not hedged using derivatives.

Short-term Borrowings

The Corporation elects to account for certain short-term borrowings, primarily short-term structured liabilities, under the fair value option because this debt is risk-managed on a fair value basis.

The Corporation also elects to account for certain asset-backed secured financings, which are also classified in short-term borrowings, under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the asset-backed secured financings at historical cost and the corresponding mortgage LHFS securing these financings at fair value.

Long-term Debt

The Corporation elects to account for certain long-term debt, primarily structured liabilities, under the fair value option. This long-term debt is either risk-managed on a fair value basis or the related hedges do not qualify for hedge accounting.

Fair Value Option Elections

The following tables provide information about the fair value carrying amount and the contractual principal outstanding of assets and liabilities accounted for under the fair value option at December 31, 2022 and 2021, and information about where changes in the fair value of assets and liabilities accounted for under the fair value option are included in the Consolidated Statement of Income for 2022, 2021 and 2020.

Fair Value Option Elections

(Dollars in millions)	December 31, 2022			December 31, 2021		
	Fair Value Carrying Amount	**Contractual Principal Outstanding**	**Fair Value Carrying Amount Less Unpaid Principal**	Fair Value Carrying Amount	Contractual Principal Outstanding	Fair Value Carrying Amount Less Unpaid Principal
Federal funds sold and securities borrowed or purchased under agreements to resell	**$ 146,999**	**$ 147,158**	**$ (159)**	$ 150,665	$ 150,677	$ (12)
Loans reported as trading account assets [1]	**10,143**	**17,682**	**(7,539)**	10,864	18,895	(8,031)
Trading inventory – other	**20,770**	**n/a**	**n/a**	21,986	n/a	n/a
Consumer and commercial loans	**5,771**	**5,897**	**(126)**	7,819	7,888	(69)
Loans held-for-sale [1]	**1,115**	**1,873**	**(758)**	4,455	5,343	(888)
Other assets	**620**	**n/a**	**n/a**	544	n/a	n/a
Long-term deposits	**311**	**381**	**(70)**	408	401	7
Federal funds purchased and securities loaned or sold under agreements to repurchase	**151,708**	**151,885**	**(177)**	139,641	139,682	(41)
Short-term borrowings	**832**	**833**	**(1)**	4,279	4,127	152
Unfunded loan commitments	**110**	**n/a**	**n/a**	97	n/a	n/a
Accrued expenses and other liabilities	**1,217**	**1,161**	**56**	—	—	—
Long-term debt	**33,070**	**36,830**	**(3,760)**	29,708	30,903	(1,195)

[1] A significant portion of the loans reported as trading account assets and LHFS are distressed loans that were purchased at a deep discount to par, and the remainder are loans with a fair value near contractual principal outstanding.

n/a = not applicable

Gains (Losses) Related to Assets and Liabilities Accounted for Under the Fair Value Option

(Dollars in millions)	Market making and similar activities	Other Income	Total
		2022	
Loans reported as trading account assets	**$ (164)**	**$ —**	**$ (164)**
Trading inventory – other [1]	**(1,159)**	**—**	**(1,159)**
Consumer and commercial loans	**(58)**	**(27)**	**(85)**
Loans held-for-sale [2]	**—**	**(304)**	**(304)**
Short-term borrowings	**639**	**—**	**639**
Unfunded loan commitments	**—**	**8**	**8**
Accrued expenses and other liabilities	**11**	**—**	**11**
Long-term debt [3]	**4,359**	**(46)**	**4,313**
Other [4]	**74**	**30**	**104**
Total	**$ 3,702**	**$ (339)**	**$ 3,363**
		2021	
Loans reported as trading account assets	$ 275	$ —	$ 275
Trading inventory – other [1]	(211)	—	(211)
Consumer and commercial loans	78	40	118
Loans held-for-sale [2]	—	58	58
Short-term borrowings	883	—	883
Long-term debt [3]	(604)	(41)	(645)
Other [4]	18	(23)	(5)
Total	$ 439	$ 34	$ 473
		2020	
Loans reported as trading account assets	$ 107	$ —	$ 107
Trading inventory – other [1]	3,216	—	3,216
Consumer and commercial loans	22	(3)	19
Loans held-for-sale [2]	—	103	103
Short-term borrowings	(170)	—	(170)
Unfunded loan commitments	—	(65)	(65)
Long-term debt [3]	(2,175)	(53)	(2,228)
Other [4]	35	(22)	13
Total	$ 1,035	$ (40)	$ 995

(1) The gains (losses) in market making and similar activities are primarily offset by (losses) gains on trading liabilities that hedge these assets.
(2) Includes the value of IRLCs on funded loans, including those sold during the period.
(3) The net gains (losses) in market making and similar activities relate to the embedded derivatives in structured liabilities and are typically offset by (losses) gains on derivatives and securities that hedge these liabilities. For the cumulative impact of changes in the Corporation's own credit spreads and the amount recognized in accumulated OCI, see *Note 14 – Accumulated Other Comprehensive Income (Loss)*. For more information on how the Corporation's own credit spread is determined, see *Note 20 – Fair Value Measurements*.
(4) Includes gains (losses) on federal funds sold and securities borrowed or purchased under agreements to resell, other assets, long-term deposits and federal funds purchased and securities loaned or sold under agreements to repurchase.

Gains (Losses) Related to Borrower-specific Credit Risk for Assets and Liabilities Accounted for Under the Fair Value Option

(Dollars in millions)	**2022**	2021	2020
Loans reported as trading account assets	**$ (950)**	$ 128	$ (172)
Consumer and commercial loans	**(51)**	7	(19)
Loans held-for-sale	**(23)**	28	(105)
Unfunded loan commitments	**8**	(1)	(65)

NOTE 22 Fair Value of Financial Instruments

Financial instruments are classified within the fair value hierarchy using the methodologies described in *Note 20 – Fair Value Measurements*. Certain loans, deposits, long-term debt, unfunded lending commitments and other financial instruments are accounted for under the fair value option. For more information, see *Note 21 – Fair Value Option*. The following disclosures include financial instruments that are not carried at fair value or only a portion of the ending balance is carried at fair value on the Consolidated Balance Sheet.

Short-term Financial Instruments

The carrying value of short-term financial instruments, including cash and cash equivalents, certain time deposits placed and other short-term investments, federal funds sold and purchased, certain resale and repurchase agreements and short-term borrowings, approximates the fair value of these instruments. These financial instruments generally expose the Corporation to limited credit risk and have no stated maturities or have short-term maturities and carry interest rates that approximate market. The Corporation accounts for certain resale and repurchase agreements under the fair value option.

Under the fair value hierarchy, cash and cash equivalents are classified as Level 1. Time deposits placed and other short-term investments, such as U.S. government securities and short-term commercial paper, are classified as Level 1 or Level 2. Federal funds sold and purchased are classified as Level 2. Resale and repurchase agreements are classified as Level 2 because they are generally short-dated and/or variable-rate instruments collateralized by U.S. government or agency securities. Short-term borrowings are classified as Level 2.

Fair Value of Financial Instruments

The carrying values and fair values by fair value hierarchy of certain financial instruments where only a portion of the ending balance was carried at fair value at December 31, 2022 and 2021 are presented in the table below.

Fair Value of Financial Instruments

(Dollars in millions)	Carrying Value	Fair Value Level 2	Fair Value Level 3	Fair Value Total
	December 31, 2022			
Financial assets				
Loans	$ 1,014,593	$ 50,194	$ 935,282	$ 985,476
Loans held-for-sale	6,871	3,417	3,455	6,872
Financial liabilities				
Deposits [1]	1,930,341	1,930,165	—	1,930,165
Long-term debt	275,982	271,993	1,136	273,129
Commercial unfunded lending commitments [2]	1,650	77	6,596	6,673
	December 31, 2021			
Financial assets				
Loans	$ 946,142	$ 53,544	$ 919,980	$ 973,524
Loans held-for-sale	15,635	15,016	627	15,643
Financial liabilities				
Deposits [1]	2,064,446	2,064,438	—	2,064,438
Long-term debt	280,117	286,802	1,288	288,090
Commercial unfunded lending commitments [2]	1,554	97	6,384	6,481

[1] Includes demand deposits of $918.9 billion and $1.0 trillion with no stated maturities at December 31, 2022 and 2021.

[2] The carrying value of commercial unfunded lending commitments is included in accrued expenses and other liabilities on the Consolidated Balance Sheet. The Corporation does not estimate the fair value of consumer unfunded lending commitments because, in many instances, the Corporation can reduce or cancel these commitments by providing notice to the borrower. For more information on commitments, see *Note 12 – Commitments and Contingencies*.

NOTE 23 Business Segment Information

The Corporation reports its results of operations through the following four business segments: *Consumer Banking*, *Global Wealth & Investment Management, Global Banking* and *Global Markets*, with the remaining operations recorded in *All Other*.

Consumer Banking

Consumer Banking offers a diversified range of credit, banking and investment products and services to consumers and small businesses. *Consumer Banking* product offerings include traditional savings accounts, money market savings accounts, CDs and IRAs, checking accounts, and investment accounts and products, as well as credit and debit cards, residential mortgages and home equity loans, and direct and indirect loans to consumers and small businesses in the U.S. *Consumer Banking* includes the impact of servicing residential mortgages and home equity loans.

Global Wealth & Investment Management

GWIM provides a high-touch client experience through a network of financial advisors focused on clients with over $250,000 in total investable assets, including tailored solutions to meet clients' needs through a full set of investment management, brokerage, banking and retirement products. *GWIM* also provides comprehensive wealth management solutions targeted to high net worth and ultra high net worth clients, as well as customized solutions to meet clients' wealth structuring, investment management, trust and banking needs, including specialty asset management services.

Global Banking

Global Banking provides a wide range of lending-related products and services, integrated working capital management and treasury solutions, and underwriting and advisory services through the Corporation's network of offices and client relationship teams. *Global Banking* also provides investment banking products to clients. The economics of certain investment banking and underwriting activities are shared primarily between *Global Banking* and *Global Markets* under an internal revenue-sharing arrangement. *Global Banking* clients generally include middle-market companies, commercial real estate firms, not-for-profit companies, large global corporations, financial institutions, leasing clients, and mid-sized U.S.-based businesses requiring customized and integrated financial advice and solutions.

Global Markets

Global Markets offers sales and trading services and research services to institutional clients across fixed-income, credit, currency, commodity and equity businesses. *Global Markets* provides market-making, financing, securities clearing, settlement and custody services globally to institutional investor clients in support of their investing and trading activities. *Global Markets* product coverage includes securities and derivative products in both the primary and secondary markets. *Global Markets* also works with commercial and corporate clients to provide risk management products. As a result of market-making activities, *Global Markets* may be required to manage risk in a broad range of financial products. In addition, the economics of certain investment banking and underwriting activities are shared primarily between *Global Markets* and *Global Banking* under an internal revenue-sharing arrangement.

All Other

All Other primarily consists of ALM activities, liquidating businesses and certain expenses not otherwise allocated to a business segment. ALM activities encompass interest rate and foreign currency risk management activities for which substantially all of the results are allocated to the business segments.

Basis of Presentation

The management accounting and reporting process derives segment and business results by utilizing allocation methodologies for revenue and expense. The net income derived for the businesses is dependent upon revenue and cost allocations using an activity-based costing model, funds transfer pricing, and other methodologies and assumptions management believes are appropriate to reflect the results of the business.

Total revenue, net of interest expense, includes net interest income on an FTE basis and noninterest income. The adjustment of net interest income to an FTE basis results in a corresponding increase in income tax expense. The segment results also reflect certain revenue and expense methodologies that are utilized to determine net income. The net interest income of the businesses includes the results of a funds transfer pricing process that matches assets and liabilities with similar interest rate sensitivity and maturity characteristics. In segments where the total of liabilities and equity exceeds assets, which are generally deposit-taking segments, the Corporation allocates assets to match liabilities. Net interest income of the business segments also includes an allocation of net interest income generated by certain of the Corporation's ALM activities.

The Corporation's ALM activities include an overall interest rate risk management strategy that incorporates the use of

various derivatives and cash instruments to manage fluctuations in earnings and capital that are caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity so that movements in interest rates do not significantly adversely affect earnings and capital. The results of a majority of the Corporation's ALM activities are allocated to the business segments and fluctuate based on the performance of the ALM activities. ALM activities include external product pricing decisions including deposit pricing strategies, the effects of the Corporation's internal funds transfer pricing process and the net effects of other ALM activities.

Certain expenses not directly attributable to a specific business segment are allocated to the segments. The costs of certain centralized or shared functions are allocated based on methodologies that reflect utilization.

Effective October 1, 2021, a business activity previously included in the *Global Markets* segment is being reported as a liquidating business in *All Other*, consistent with a realignment in performance reporting to senior management. While this activity was not material to *Global Markets'* results of operations and historical results have not been restated, this activity's noninterest expense of $309 million and $473 million for the three months ended September 30, 2021 and June 30, 2021 was elevated and would have been excluded from *Global Markets'* results of operations for those periods under the new basis of presentation.

The table below presents net income (loss) and the components thereto (with net interest income on an FTE basis for the business segments, *All Other* and the total Corporation) for 2022, 2021 and 2020, and total assets at December 31, 2022, 2021 and 2020 for each business segment, as well as *All Other.*

Results of Business Segments and All Other

At and for the year ended December 31	Total Corporation [1]			Consumer Banking		
(Dollars in millions)	**2022**	2021	2020	**2022**	2021	2020
Net interest income	**$ 52,900**	$ 43,361	$ 43,859	**$ 30,045**	$ 24,929	$ 24,698
Noninterest income	**42,488**	46,179	42,168	**8,590**	9,076	8,564
Total revenue, net of interest expense	**95,388**	89,540	86,027	**38,635**	34,005	33,262
Provision for credit losses	**2,543**	(4,594)	11,320	**1,980**	(1,035)	5,765
Noninterest expense	**61,438**	59,731	55,213	**20,077**	19,290	18,882
Income before income taxes	**31,407**	34,403	19,494	**16,578**	15,750	8,615
Income tax expense	**3,879**	2,425	1,600	**4,062**	3,859	2,111
Net income	**$ 27,528**	$ 31,978	$ 17,894	**$ 12,516**	$ 11,891	$ 6,504
Year-end total assets	**$ 3,051,375**	$ 3,169,495		**$ 1,126,453**	$ 1,131,142	

	Global Wealth & Investment Management			Global Banking		
	2022	2021	2020	**2022**	2021	2020
Net interest income	**$ 7,466**	$ 5,664	$ 5,468	**$ 12,184**	$ 8,511	$ 9,013
Noninterest income	**14,282**	15,084	13,116	**10,045**	12,364	9,974
Total revenue, net of interest expense	**21,748**	20,748	18,584	**22,229**	20,875	18,987
Provision for credit losses	**66**	(241)	357	**641**	(3,201)	4,897
Noninterest expense	**15,490**	15,258	14,160	**10,966**	10,632	9,342
Income before income taxes	**6,192**	5,731	4,067	**10,622**	13,444	4,748
Income tax expense	**1,517**	1,404	996	**2,815**	3,630	1,282
Net income	**$ 4,675**	$ 4,327	$ 3,071	**$ 7,807**	$ 9,814	$ 3,466
Year-end total assets	**$ 368,893**	$ 438,275		**$ 588,466**	$ 638,131	

	Global Markets			All Other		
	2022	2021	2020	**2022**	2021	2020
Net interest income	**$ 3,088**	$ 4,011	$ 4,646	**$ 117**	$ 246	$ 34
Noninterest income	**15,050**	15,244	14,119	**(5,479)**	(5,589)	(3,605)
Total revenue, net of interest expense	**18,138**	19,255	18,765	**(5,362)**	(5,343)	(3,571)
Provision for credit losses	**28**	65	251	**(172)**	(182)	50
Noninterest expense	**12,420**	13,032	11,417	**2,485**	1,519	1,412
Income (loss) before income taxes	**5,690**	6,158	7,097	**(7,675)**	(6,680)	(5,033)
Income tax expense (benefit)	**1,508**	1,601	1,845	**(6,023)**	(8,069)	(4,634)
Net income (loss)	**$ 4,182**	$ 4,557	$ 5,252	**$ (1,652)**	$ 1,389	$ (399)
Year-end total assets	**$ 812,489**	$ 747,794		**$ 155,074**	$ 214,153	

[1] There were no material intersegment revenues.

The tables below present noninterest income and the associated components for 2022, 2021 and 2020 for each business segment, *All Other* and the total Corporation. For more information, see *Note 2 – Net Interest Income and Noninterest Income*.

Noninterest Income by Business Segment and All Other

(Dollars in millions)	Total Corporation			Consumer Banking			Global Wealth & Investment Management		
	2022	2021	2020	**2022**	2021	2020	**2022**	2021	2020
Fees and commissions:									
Card income									
Interchange fees	**$ 4,096**	$ 4,560	$ 3,954	**$ 3,239**	$ 3,597	$ 3,027	**$ 20**	$ 43	$ 36
Other card income	**1,987**	1,658	1,702	**1,930**	1,575	1,646	**50**	42	42
Total card income	**6,083**	6,218	5,656	**5,169**	5,172	4,673	**70**	85	78
Service charges									
Deposit-related fees	**5,190**	6,271	5,991	**2,706**	3,538	3,417	**65**	72	67
Lending-related fees	**1,215**	1,233	1,150	**—**	—	—	**8**	—	—
Total service charges	**6,405**	7,504	7,141	**2,706**	3,538	3,417	**73**	72	67
Investment and brokerage services									
Asset management fees	**12,152**	12,729	10,708	**195**	188	146	**11,957**	12,541	10,578
Brokerage fees	**3,749**	3,961	3,866	**109**	132	127	**1,604**	1,771	1,692
Total investment and brokerage services	**15,901**	16,690	14,574	**304**	320	273	**13,561**	14,312	12,270
Investment banking fees									
Underwriting income	**1,970**	5,077	4,698	**—**	—	—	**189**	388	391
Syndication fees	**1,070**	1,499	861	**—**	—	—	**—**	—	—
Financial advisory services	**1,783**	2,311	1,621	**—**	—	—	**—**	—	—
Total investment banking fees	**4,823**	8,887	7,180	**—**	—	—	**189**	388	391
Total fees and commissions	**33,212**	39,299	34,551	**8,179**	9,030	8,363	**13,893**	14,857	12,806
Market making and similar activities	**12,075**	8,691	8,355	**10**	1	2	**102**	40	63
Other income (loss)	**(2,799)**	(1,811)	(738)	**401**	45	199	**287**	187	247
Total noninterest income	**$ 42,488**	$ 46,179	$ 42,168	**$ 8,590**	$ 9,076	$ 8,564	**$ 14,282**	$ 15,084	$ 13,116

	Global Banking			Global Markets			All Other [1]		
	2022	2021	2020	**2022**	2021	2020	**2022**	2021	2020
Fees and commissions:									
Card income									
Interchange fees	**$ 767**	$ 700	$ 499	**$ 66**	$ 220	$ 391	**$ 4**	$ —	$ 1
Other card income	**7**	13	14	**—**	—	—	**—**	28	—
Total card income	**774**	713	513	**66**	220	391	**4**	28	1
Service charges									
Deposit-related fees	**2,310**	2,508	2,298	**101**	146	177	**8**	7	32
Lending-related fees	**983**	1,015	940	**224**	218	210	**—**	—	—
Total service charges	**3,293**	3,523	3,238	**325**	364	387	**8**	7	32
Investment and brokerage services									
Asset management fees	**—**	—	—	**—**	—	—	**—**	—	(16)
Brokerage fees	**42**	104	74	**2,002**	1,979	1,973	**(8)**	(25)	—
Total investment and brokerage services	**42**	104	74	**2,002**	1,979	1,973	**(8)**	(25)	(16)
Investment banking fees									
Underwriting income	**796**	2,187	2,070	**1,176**	2,725	2,449	**(191)**	(223)	(212)
Syndication fees	**565**	781	482	**505**	718	379	**—**	—	—
Financial advisory services	**1,643**	2,139	1,458	**139**	173	163	**1**	(1)	—
Total investment banking fees	**3,004**	5,107	4,010	**1,820**	3,616	2,991	**(190)**	(224)	(212)
Total fees and commissions	**7,113**	9,447	7,835	**4,213**	6,179	5,742	**(186)**	(214)	(195)
Market making and similar activities	**215**	145	103	**11,406**	8,760	8,471	**342**	(255)	(284)
Other income (loss)	**2,717**	2,772	2,036	**(569)**	305	(94)	**(5,635)**	(5,120)	(3,126)
Total noninterest income	**$ 10,045**	$ 12,364	$ 9,974	**$ 15,050**	$ 15,244	$ 14,119	**$ (5,479)**	$ (5,589)	$ (3,605)

[1] *All Other* includes eliminations of intercompany transactions.

Business Segment Reconciliations

(Dollars in millions)	2022	2021	2020
Segments' total revenue, net of interest expense	**$ 100,750**	$ 94,883	$ 89,598
Adjustments [1]:			
Asset and liability management activities	**(164)**	(4)	375
Liquidating businesses, eliminations and other	**(5,198)**	(5,339)	(3,946)
FTE basis adjustment	**(438)**	(427)	(499)
Consolidated revenue, net of interest expense	**$ 94,950**	$ 89,113	$ 85,528
Segments' total net income	**29,180**	30,589	18,293
Adjustments, net-of-tax [1]:			
Asset and liability management activities	**(122)**	11	279
Liquidating businesses, eliminations and other	**(1,530)**	1,378	(678)
Consolidated net income	**$ 27,528**	$ 31,978	$ 17,894

	December 31	
	2022	2021
Segments' total assets	**$ 2,896,301**	$ 2,955,342
Adjustments [1]:		
Asset and liability management activities, including securities portfolio	**1,133,375**	1,363,626
Elimination of segment asset allocations to match liabilities	**(1,041,793)**	(1,216,891)
Other	**63,492**	67,418
Consolidated total assets	**$ 3,051,375**	$ 3,169,495

[1] Adjustments include consolidated income, expense and asset amounts not specifically allocated to individual business segments.

NOTE 24 Parent Company Information

The following tables present the Parent Company-only financial information.

Condensed Statement of Income

(Dollars in millions)	2022	2021	2020
Income			
Dividends from subsidiaries:			
Bank holding companies and related subsidiaries	**$ 22,250**	$ 15,621	$ 10,352
Interest from subsidiaries	**12,420**	8,362	8,825
Other income (loss)	**(201)**	(114)	(138)
Total income	**34,469**	23,869	19,039
Expense			
Interest on borrowed funds from subsidiaries	**236**	54	136
Other interest expense	**7,041**	3,383	4,119
Noninterest expense	**1,322**	1,531	1,651
Total expense	**8,599**	4,968	5,906
Income before income taxes and equity in undistributed earnings of subsidiaries	**25,870**	18,901	13,133
Income tax expense	**683**	886	649
Income before equity in undistributed earnings of subsidiaries	**25,187**	18,015	12,484
Equity in undistributed earnings (losses) of subsidiaries:			
Bank holding companies and related subsidiaries	**2,333**	14,078	5,372
Nonbank companies and related subsidiaries	**8**	(115)	38
Total equity in undistributed earnings (losses) of subsidiaries	**2,341**	13,963	5,410
Net income	**$ 27,528**	$ 31,978	$ 17,894

Condensed Balance Sheet

(Dollars in millions)	December 31 2022	2021
Assets		
Cash held at bank subsidiaries	**$ 9,609**	$ 5,011
Securities	**617**	671
Receivables from subsidiaries:		
Bank holding companies and related subsidiaries	**222,584**	217,447
Banks and related subsidiaries	**220**	347
Nonbank companies and related subsidiaries	**978**	368
Investments in subsidiaries:		
Bank holding companies and related subsidiaries	**301,207**	316,497
Nonbank companies and related subsidiaries	**3,770**	3,645
Other assets	**7,156**	8,602
Total assets	**$ 546,141**	$ 552,588
Liabilities and shareholders' equity		
Accrued expenses and other liabilities	**$ 14,193**	$ 17,394
Payables to subsidiaries:		
Banks and related subsidiaries	**260**	107
Bank holding companies and related subsidiaries	**21**	3
Nonbank companies and related subsidiaries	**14,578**	11,564
Long-term debt	**243,892**	253,454
Total liabilities	**272,944**	282,522
Shareholders' equity	**273,197**	270,066
Total liabilities and shareholders' equity	**$ 546,141**	$ 552,588

Condensed Statement of Cash Flows

(Dollars in millions)	2022	2021	2020
Operating activities			
Net income	**$ 27,528**	$ 31,978	$ 17,894
Reconciliation of net income (loss) to net cash provided by (used in) operating activities:			
Equity in undistributed (earnings) losses of subsidiaries	**(2,341)**	(13,963)	(5,410)
Other operating activities, net	**(31,777)**	(7,144)	14,303
Net cash provided by (used in) operating activities	**(6,590)**	10,871	26,787
Investing activities			
Net sales (purchases) of securities	**25**	(14)	(4)
Net payments to subsidiaries	**(6,044)**	(10,796)	(33,111)
Other investing activities, net	**(34)**	(26)	(7)
Net cash used in investing activities	**(6,053)**	(10,836)	(33,122)
Financing activities			
Net increase (decrease) in other advances	**2,853**	503	(422)
Proceeds from issuance of long-term debt	**44,123**	56,106	43,766
Retirement of long-term debt	**(19,858)**	(24,544)	(23,168)
Proceeds from issuance of preferred stock and warrants	**4,426**	2,170	2,181
Redemption of preferred stock	**(654)**	(1,971)	(1,072)
Common stock repurchased	**(5,073)**	(25,126)	(7,025)
Cash dividends paid	**(8,576)**	(8,055)	(7,727)
Net cash provided by (used in) financing activities	**17,241**	(917)	6,533
Net increase (decrease) in cash held at bank subsidiaries	**4,598**	(882)	198
Cash held at bank subsidiaries at January 1	**5,011**	5,893	5,695
Cash held at bank subsidiaries at December 31	**$ 9,609**	$ 5,011	$ 5,893

NOTE 25 Performance by Geographical Area

The Corporation's operations are highly integrated with operations in both U.S. and non-U.S. markets. The non-U.S. business activities are largely conducted in Europe, the Middle East and Africa and in Asia. The Corporation identifies its geographic performance based on the business unit structure used to manage the capital or expense deployed in the region as applicable. This requires certain judgments related to the allocation of revenue so that revenue can be appropriately matched with the related capital or expense deployed in the region. Certain asset, liability, income and expense amounts have been allocated to arrive at total assets, total revenue, net of interest expense, income before income taxes and net income by geographic area as presented below.

(Dollars in millions)		Total Assets at Year End [1]	Total Revenue, Net of Interest Expense [2]	Income Before Income Taxes	Net Income
U.S. [3]	**2022**	**$ 2,631,815**	**$ 82,890**	**$ 28,135**	**$ 25,607**
	2021	2,789,862	78,012	31,392	27,781
	2020		75,576	18,247	16,692
Asia	**2022**	**127,399**	**4,597**	**1,144**	**865**
	2021	117,085	4,439	988	733
	2020		4,232	1,051	788
Europe, Middle East and Africa	**2022**	**262,856**	**6,044**	**1,121**	**689**
	2021	233,356	5,423	1,097	3,134
	2020		4,491	(596)	264
Latin America and the Caribbean	**2022**	**29,305**	**1,419**	**569**	**367**
	2021	29,192	1,239	499	330
	2020		1,229	293	150
Total Non-U.S.	**2022**	**419,560**	**12,060**	**2,834**	**1,921**
	2021	379,633	11,101	2,584	4,197
	2020		9,952	748	1,202
Total Consolidated	**2022**	**$ 3,051,375**	**$ 94,950**	**$ 30,969**	**$ 27,528**
	2021	3,169,495	89,113	33,976	31,978
	2020		85,528	18,995	17,894

[1] Total assets include long-lived assets, which are primarily located in the U.S.
[2] There were no material intercompany revenues between geographic regions for any of the periods presented.
[3] Substantially reflects the U.S.

Glossary

Alt-A Mortgage – A type of U.S. mortgage that is considered riskier than A-paper, or "prime," and less risky than "subprime," the riskiest category. Typically, Alt-A mortgages are characterized by borrowers with less than full documentation, lower credit scores and higher LTVs.

Assets Under Management (AUM) – The total market value of assets under the investment advisory and/or discretion of *GWIM* which generate asset management fees based on a percentage of the assets' market values. AUM reflects assets that are generally managed for institutional, high net worth and retail clients, and are distributed through various investment products including mutual funds, other commingled vehicles and separate accounts.

Banking Book – All on- and off-balance sheet financial instruments of the Corporation except for those positions that are held for trading purposes.

Brokerage and Other Assets – Non-discretionary client assets which are held in brokerage accounts or held for safekeeping.

Committed Credit Exposure – Any funded portion of a facility plus the unfunded portion of a facility on which the lender is legally bound to advance funds during a specified period under prescribed conditions.

Credit Derivatives – Contractual agreements that provide protection against a specified credit event on one or more referenced obligations.

Credit Valuation Adjustment (CVA) – A portfolio adjustment required to properly reflect the counterparty credit risk exposure as part of the fair value of derivative instruments.

Debit Valuation Adjustment (DVA) – A portfolio adjustment required to properly reflect the Corporation's own credit risk exposure as part of the fair value of derivative instruments and/or structured liabilities.

Funding Valuation Adjustment (FVA) – A portfolio adjustment required to include funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives.

Interest Rate Lock Commitment (IRLC) – Commitment with a loan applicant in which the loan terms are guaranteed for a designated period of time subject to credit approval.

Letter of Credit – A document issued on behalf of a customer to a third party promising to pay the third party upon presentation of specified documents. A letter of credit effectively substitutes the issuer's credit for that of the customer.

Loan-to-value (LTV) – A commonly used credit quality metric. LTV is calculated as the outstanding carrying value of the loan divided by the estimated value of the property securing the loan.

Macro Products – Include currencies, interest rates and commodities products.

Margin Receivable – An extension of credit secured by eligible securities in certain brokerage accounts.

Matched Book – Repurchase and resale agreements or securities borrowed and loaned transactions where the overall asset and liability position is similar in size and/or maturity. Generally, these are entered into to accommodate customers where the Corporation earns the interest rate spread.

Mortgage Servicing Rights (MSR) – The right to service a mortgage loan when the underlying loan is sold or securitized. Servicing includes collections for principal, interest and escrow payments from borrowers and accounting for and remitting principal and interest payments to investors.

Nonperforming Loans and Leases – Includes loans and leases that have been placed on nonaccrual status, including nonaccruing loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties.

Prompt Corrective Action (PCA) – A framework established by the U.S. banking regulators requiring banks to maintain certain levels of regulatory capital ratios, comprised of five categories of capitalization: "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" and "critically undercapitalized." Insured depository institutions that fail to meet certain of these capital levels are subject to increasingly strict limits on their activities, including their ability to make capital distributions, pay management compensation, grow assets and take other actions.

Subprime Loans – Although a standard industry definition for subprime loans (including subprime mortgage loans) does not exist, the Corporation defines subprime loans as specific product offerings for higher risk borrowers.

Troubled Debt Restructurings (TDRs) – Loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties. Certain consumer loans for which a binding offer to restructure has been extended are also classified as TDRs.

Value-at-Risk (VaR) – VaR is a model that simulates the value of a portfolio under a range of hypothetical scenarios in order to generate a distribution of potential gains and losses. VaR represents the loss the portfolio is expected to experience with a given confidence level based on historical data. A VaR model is an effective tool in estimating ranges of potential gains and losses on our trading portfolios.

Key Metrics

Active Digital Banking Users – Mobile and/or online active users over the past 90 days.

Active Mobile Banking Users – Mobile active users over the past 90 days.

Book Value – Ending common shareholders' equity divided by ending common shares outstanding.

Common Equity Ratio - Ending common shareholders' equity divided by ending total assets.

Deposit Spread – Annualized net interest income divided by average deposits.

Dividend Payout Ratio – Common dividends declared divided by net income applicable to common shareholders.

Efficiency Ratio – Noninterest expense divided by total revenue, net of interest expense.

Gross Interest Yield – Effective annual percentage rate divided by average loans.

Net Interest Yield – Net interest income divided by average total interest-earning assets.

Operating Margin – Income before income taxes divided by total revenue, net of interest expense.

Return on Average Allocated Capital – Adjusted net income divided by allocated capital.

Return on Average Assets – Net income divided by total average assets.

Return on Average Common Shareholders' Equity – Net income applicable to common shareholders divided by average common shareholders' equity.

Return on Average Shareholders' Equity – Net income divided by average shareholders' equity.

Risk-adjusted Margin – Difference between total revenue, net of interest expense, and net credit losses divided by average loans.

Acronyms

ABS	Asset-backed securities
AFS	Available-for-sale
AI	Artificial intelligence
ALM	Asset and liability management
ARR	Alternative reference rates
AUM	Assets under management
AVM	Automated valuation model
BANA	Bank of America, National Association
BHC	Bank holding company
BofAS	BofA Securities, Inc.
BofASE	BofA Securities Europe SA
bps	Basis points
CAE	Chief Audit Executive
CCAR	Comprehensive Capital Analysis and Review
CDO	Collateralized debt obligation
CDS	Credit default swap
CECL	Current expected credit losses
CET1	Common equity tier 1
CFPB	Consumer Financial Protection Bureau
CFTC	Commodity Futures Trading Commission
CLO	Collateralized loan obligation
CLTV	Combined loan-to-value
CRO	Chief Risk Officer
CVA	Credit valuation adjustment
DIF	Deposit Insurance Fund
DVA	Debit valuation adjustment
ECL	Expected credit losses
EPS	Earnings per common share
ERC	Enterprise Risk Committee
ESG	Environmental, social and governance
EU	European Union
FCA	Financial Conduct Authority
FDIC	Federal Deposit Insurance Corporation
FDICIA	Federal Deposit Insurance Corporation Improvement Act of 1991
FHA	Federal Housing Administration
FHLB	Federal Home Loan Bank
FHLMC	Freddie Mac
FICC	Fixed income, currencies and commodities
FICO	Fair Isaac Corporation (credit score)
FLUs	Front line units
FNMA	Fannie Mae
FTE	Fully taxable-equivalent
FVA	Funding valuation adjustment
GAAP	Accounting principles generally accepted in the United States of America
GDPR	General Data Protection Regulation
GLS	Global Liquidity Sources
GNMA	Government National Mortgage Association
GRM	Global Risk Management
GSE	Government-sponsored enterprise
G-SIB	Global systemically important bank
GWIM	Global Wealth & Investment Management
HELOC	Home equity line of credit
HQLA	High Quality Liquid Assets
HTM	Held-to-maturity
IBOR	Interbank Offered Rates
ICAAP	Internal Capital Adequacy Assessment Process
IRLC	Interest rate lock commitment
ISDA	International Swaps and Derivatives Association, Inc.
LCR	Liquidity Coverage Ratio
LHFS	Loans held-for-sale
LIBOR	London Interbank Offered Rate
LTV	Loan-to-value
MBS	Mortgage-backed securities
MD&A	Management's Discussion and Analysis of Financial Condition and Results of Operations
MLI	Merrill Lynch International
MLPCC	Merrill Lynch Professional Clearing Corp
MLPF&S	Merrill Lynch, Pierce, Fenner & Smith Incorporated
MRC	Management Risk Committee
MSA	Metropolitan Statistical Area
MSR	Mortgage servicing right
NOL	Net operating loss
NSFR	Net Stable Funding Ratio
OCC	Office of the Comptroller of the Currency
OCI	Other comprehensive income
OREO	Other real estate owned
OTC	Over-the-counter
PCA	Prompt Corrective Action
PPP	Paycheck Protection Program
RMBS	Residential mortgage-backed securities
RSU	Restricted stock unit
RWA	Risk-weighted assets
SBA	Small Business Administration
SBLC	Standby letter of credit
SCB	Stress capital buffer
SEC	Securities and Exchange Commission
SLR	Supplementary leverage ratio
TDR	Troubled debt restructurings
TLAC	Total loss-absorbing capacity
UDAAP	Unfair, deceptive, or abusive acts or practices
VA	U.S. Department of Veterans Affairs
VaR	Value-at-Risk
VIE	Variable interest entity

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

As of the end of the period covered by this report and pursuant to Rule 13a-15 of the Securities Exchange Act of 1934, as amended (Exchange Act), Bank of America's management, including the Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness and design of our disclosure controls and procedures (as that term is defined in Rule 13a-15(e) of the Exchange Act). Based upon that evaluation, Bank of America's Chief Executive Officer and Chief Financial Officer concluded that Bank of America's disclosure controls and procedures were effective, as of the end of the period covered by this report.

Report of Management on Internal Control Over Financial Reporting

The Report of Management on Internal Control Over Financial Reporting is set forth on page 87 and incorporated herein by reference. The Report of Independent Registered Public Accounting Firm with respect to the Corporation's internal control over financial reporting is set forth on pages 88 and 89 and incorporated herein by reference.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) during the quarter ended December 31, 2022, that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Disclosure Pursuant to Section 13(r) of the Securities Exchange Act of 1934

Pursuant to Section 13(r) of the Exchange Act, an issuer is required to disclose in its annual or quarterly reports, as applicable, whether it or any of its affiliates knowingly engaged in certain activities, transactions or dealings relating to Iran or with individuals or entities designated pursuant to certain Executive Orders. Disclosure may be required even where the activities, transactions or dealings were conducted in compliance with applicable law. As previously disclosed in its related quarterly reports on Form 10-Q, the Corporation identified and reported certain activities pursuant to Section 13(r) for the first, second and third quarters of 2022. The information provided pursuant to Section 13(r) of the Exchange Act in Item 5 of the quarters ended March 31, 2022, June 30, 2022 and September 30, 2022 is hereby incorporated by reference to such reports. Except as set forth below, as of the date of this Annual Report on Form 10-K, the Corporation is not aware of any other activity, transaction or dealing by any of its affiliates during the quarter ended December 31, 2022 that requires disclosure under Section 13(r) of the Exchange Act.

During the fourth quarter of 2022, Bank of America, National Association (BANA), a U.S. subsidiary of Bank of America Corporation, processed two authorized wire deposits totaling $596,890 pursuant to a specific license issued on April 21, 2022, by the U.S. Department of the Treasury's Office of Foreign Assets Control. The wire deposits were processed by BANA on behalf of a U.S. client into its account at BANA and settled invoices owed to the U.S. client. The deposits were unblocked funds belonging to Jammal Trust Bank, which at the time of the deposits was designated pursuant to Executive Order 13224. There was no measurable gross revenue or net profit to the Corporation relating to these transactions. The Corporation may in the future engage in similar transactions for its clients to the extent permitted by U.S. law.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Part III

Bank of America Corporation and Subsidiaries

Item 10. Directors, Executive Officers and Corporate Governance

Information about our Executive Officers

The name, age, position and office, and business experience of our current executive officers are:

Dean C. Athanasia (56) President, Regional Banking since October 2021; President, Retail and Preferred & Small Business Banking from January 2019 to October 2021; Co-Head – Consumer Banking from September 2014 to January 2019; and Preferred and Small Business Banking Executive from April 2011 to September 2014.

Aditya Bhasin (49) Chief Technology & Information Officer since October 2021; Chief Information Officer and Head of Technology for Consumer, Small Business, Wealth Management and Employee Technology from October 2017 to October 2021; CIO, Retail, Preferred & Wealth Management Technology, and Wealth Management Operations from June 2015 to October 2017.

Darrin Steve Boland (54) Chief Administrative Officer since October 2021; President, Retail from February 2020 to October 2021; Head of Consumer Lending from May 2017 to February 2020; Consumer Lending Executive from May 2015 to May 2017.

Alastair M. Borthwick (54) Chief Financial Officer since November 2021; President of Global Commercial Banking from October 2012 to October 2021.

Sheri Bronstein (54) Chief Human Resources Officer since January 2019; Global Human Resources Executive from July 2015 to January 2019; and HR Executive for Global Banking & Markets from March 2010 to July 2015.

James P. DeMare (53) President, Global Markets since September 2020; Global Co-Head of FICC Trading and Commercial Real Estate Banking from February 2015 to September 2020.

Paul M. Donofrio (62) Vice Chair since November 2021; Chief Financial Officer from August 2015 to November 2021; Strategic Finance Executive from April 2015 to August 2015; and Head of Global Corporate Credit and Transaction Banking from January 2012 to April 2015.

Geoffrey S. Greener (58) Chief Risk Officer since April 2014; Head of Enterprise Capital Management from April 2011 to April 2014.

Kathleen A. Knox (59) President, The Private Bank since November 2017; Head of Business Banking from October 2014 to November 2017; and Retail Banking & Distribution Executive from June 2011 to October 2014.

Matthew M. Koder (51) President, Global Corporate & Investment Banking since December 2018; President of APAC from March 2012 to December 2018.

Bernard A. Mensah (54) President, International, CEO of Merrill Lynch International (MLI), BANA London Branch Head since August 2020. President of UK and Central and Eastern Europe, the Middle East, Africa, CEO of MLI, BANA London Branch and Co-Head of Global Fixed Income Currency and Commodities (FICC) Trading from September 2019 to August 2020; Co-Head of Global FICC Trading from March 2015 to September 2019.

Lauren A. Mogensen (60) Global General Counsel since November 2021; Head of Global Compliance & Operational Risk, and Reputational Risk from December 2013 to October 2021.

Brian T. Moynihan (63) Chair of the Board since October 2014, and President, Chief Executive Officer, and member of the Board of Directors since January 2010.

Thong M. Nguyen (64) Vice Chair, Head of Global Strategy & Enterprise Platforms since October 2021; Vice Chairman from January 2019 to October 2021; Co-Head – Consumer Banking from September 2014 to January 2019; Retail Banking Executive from April 2014 to September 2014; and Retail Strategy, and Operations & Digital Banking Executive from September 2012 to April 2014.

Thomas M. Scrivener (51) Chief Operations Executive since October 2021; Head of Consumer, Small Business & Wealth Management Operations from October 2019 to October 2021; Global Real Estate and Enterprise Initiatives Executive from September 2018 to October 2019; Enterprise Scenario Planning and Execution Executive from May 2016 to September 2018; Enterprise Stress Testing, Recovery & Resolution Planning Executive from June 2014 to March 2016.

Andrew M. Sieg (55) President, Merrill Wealth Management since January 2017; and Head of Global Wealth & Retirement Solutions with Merrill Lynch from October 2011 to January 2017.

Bruce R. Thompson (58) Vice Chair, Head of Enterprise Credit since October 2021; Vice Chairman, Head of Institutional Credit Exposure Management (from December 2020) and Wholesale Credit Underwriting and Monitoring (from May 2021) to October 2021; Vice Chairman, President of the EU & Switzerland and CEO of Bank of America Europe DAC from May 2018 to December 2020; Vice Chairman of Bank of America Corporation from March 2016 to May 2018; Managing Director from July 2015 to March 2016; Chief Financial Officer from July 2011 to July 2015.

Information included under the following captions in the Corporation's proxy statement relating to its 2023 annual meeting of shareholders (the 2023 Proxy Statement) is incorporated herein by reference:

- "Proposal 1: Electing directors – Our director nominees;"
- "Corporate governance – Additional corporate governance information;"
- "Corporate governance – Committees and membership;" and
- "Corporate governance – Board meetings and attendance."

Item 11. Executive Compensation

Information included under the following captions in the 2023 Proxy Statement is incorporated herein by reference:

- "Compensation discussion and analysis;"
- "Compensation and Human Capital Committee Report;"
- "Executive compensation;"
- "CEO pay ratio;"
- "Corporate governance;" and
- "Director compensation."

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information included under the following caption in the 2023 Proxy Statement is incorporated herein by reference:

- "Stock ownership of directors, executive officers, and certain beneficial owners."

The table below presents information on equity compensation plans at December 31, 2022:

Plan Category [1]	(a) Number of Shares to be Issued Under Outstanding Options, Warrants and Rights [2]	(b) Weighted-average Exercise Price of Outstanding Options, Warrants and Rights [3]	(c) Number of Shares Remaining for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a)) [4]
Plans approved by shareholders	206,439,608	—	164,047,513
Plans not approved by shareholders	—	—	—
Total	**206,439,608**	—	**164,047,513**

[1] This table does not include 522,076 vested restricted stock units and stock option gain deferrals at December 31, 2022 that were assumed by the Corporation in connection with prior acquisitions under whose plans the awards were originally granted.
[2] Consists of outstanding restricted stock units. Includes 3,914,068 vested restricted stock units subject to a required 12-month holding period.
[3] Restricted stock units do not have an exercise price and are delivered without any payment or consideration.
[4] Amount represents shares of common stock available for future issuance under the Bank of America Corporation Equity Plan.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information included under the following captions in the 2023 Proxy Statement is incorporated herein by reference:

- "Related person and certain other transactions;" and
- "Corporate governance – Director independence."

Item 14. Principal Accounting Fees and Services

Information included under the following caption in the 2023 Proxy Statement is incorporated herein by reference:

- "Proposal 4: Ratifying the appointment of our independent registered public accounting firm for 2023."

Part IV

Bank of America Corporation and Subsidiaries

Item 15. Exhibits, Financial Statement Schedules

The following documents are filed as part of this report:

(1) Financial Statements:
Report of Independent Registered Public Accounting Firm (PCAOB ID 238)
Consolidated Statement of Income for the years ended December 31, 2022, 2021 and 2020
Consolidated Statement of Comprehensive Income for the years ended December 31, 2022, 2021 and 2020
Consolidated Balance Sheet at December 31, 2022 and 2021
Consolidated Statement of Changes in Shareholders' Equity for the years ended December 31, 2022, 2021 and 2020
Consolidated Statement of Cash Flows for the years ended December 31, 2022, 2021 and 2020
Notes to Consolidated Financial Statements

(2) Schedules:
None

(3) Index to Exhibits

With the exception of the information expressly incorporated herein by reference, the 2023 Proxy Statement shall not be deemed filed as part of this Annual Report on Form 10-K.

			Incorporated by Reference			
Exhibit No.	Description	Notes	Form	Exhibit	Filing Date	File No.
3.1	Restated Certificate of Incorporation, as amended and in effect on the date hereof		10-Q	3.1	04/29/22	1-6523
3.2	Amended and Restated Bylaws of the Corporation as in effect on the date hereof	1				
4.1	Indenture dated as of January 1, 1995 (for senior debt securities) between registrant (successor to NationsBank Corporation) and BankAmerica National Trust Company		S-3	4.1	2/1/95	33-57533
4.2	First Supplemental Indenture dated as of September 18, 1998 between registrant and U.S. Bank Trust National Association (successor to BankAmerica National Trust Company) to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		8-K	4.3	11/18/98	1-6523
4.3	Second Supplemental Indenture dated as of May 7, 2001 between registrant, U.S. Bank Trust National Association, as Prior Trustee, and The Bank of New York, as Successor Trustee to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		8-K	4.4	6/14/01	1-6523
4.4	Third Supplemental Indenture dated as of July 28, 2004 between registrant and The Bank of New York to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		8-K	4.2	8/27/04	1-6523
4.5	Fourth Supplemental Indenture dated as of April 28, 2006 between the registrant and The Bank of New York to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		S-3	4.6	5/5/06	333-133852
4.6	Fifth Supplemental Indenture dated as of December 1, 2008 between registrant and The Bank of New York Mellon Trust Company, N.A. (successor to The Bank of New York) to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		8-K	4.1	12/5/08	1-6523
4.7	Sixth Supplemental Indenture dated as of February 23, 2011 between registrant and The Bank of New York Mellon Trust Company, N.A. to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		10-K	4(ee)	2/25/11	1-6523
4.8	Seventh Supplemental Indenture dated as of January 13, 2017 between registrant and The Bank of New York Mellon Trust Company, N.A. to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		8-K	4.1	1/13/17	1-6523
4.9	Eighth Supplemental Indenture dated as of February 23, 2017 between registrant and the Bank of New York Mellon Trust Company, N.A. to the indenture dated as of January 1, 1995 (See Exhibit 4.1)		10-K	4(a)	2/23/17	1-6523
4.10	Successor Trustee Agreement effective December 15, 1995 between registrant (successor to NationsBank Corporation) and First Trust of New York, National Association, as successor trustee to BankAmerica National Trust Company		S-3	4.2	6/28/96	333-07229
4.11	Agreement of Appointment and Acceptance dated as of December 29, 2006 between registrant and The Bank of New York Trust Company, N.A.		10-K	4(aaa)	2/28/07	1-6523
4.12	Form of Senior Registered Note		S-3	4.12	5/1/15	333-202354
4.13	Form of Registered Global Senior Medium-Term Note, Series L		S-3	4.13	5/1/15	333-202354
4.14	Form of Master Registered Global Senior Medium-Term Note, Series L		S-3	4.14	5/1/15	333-202354
4.15	Form of Registered Global Senior Medium-Term Note, Series M		8-K	4.2	1/13/17	1-6523
4.16	Form of Master Registered Global Senior Medium-Term Note, Series M		8-K	4.3	1/13/17	1-6523
4.17	Indenture dated as of January 1, 1995 (for subordinated debt securities) between registrant (successor to NationsBank Corporation) and The Bank of New York		S-3	4.5	2/1/95	33-57533
4.18	First Supplemental Indenture dated as of August 28, 1998 between registrant and The Bank of New York to the indenture dated as of January 1, 1995 (See Exhibit 4.17)		8-K	4.8	11/18/98	1-6523

			Incorporated by Reference			
Exhibit No.	Description	Notes	Form	Exhibit	Filing Date	File No.
4.19	Second Supplemental Indenture dated as of January 25, 2007 between registrant and The Bank of New York Trust Company, N.A. (successor to The Bank of New York) to the indenture dated as of January 1, 1995 (See Exhibit 4.17)		S-4	4.3	3/16/07	333-141361
4.20	Third Supplemental Indenture dated as of February 23, 2011 between registrant and The Bank of New York Mellon Trust Company, N.A. (formerly The Bank of New York Trust Company, N.A.) to the indenture dated as of January 1, 1995 (See Exhibit 4.17)		10-K	4(ff)	2/25/11	1-6523
4.21	Fourth Supplemental Indenture dated as of February 23, 2017 between registrant and The Bank of New York Mellon Trust Company, N.A. to the indenture dated as of January 1, 1995 (See Exhibit 4.17)		10-K	4(i)	2/23/17	1-6523
4.22	Indenture dated as of June 27, 2018 (for senior debt securities) between the registrant and The Bank of New York Mellon Trust Company, N.A.		S-3	4.3	6/27/18	333-224523
4.23	Form of Registered Global Senior Medium-Term Note, Series N (prior to August 2021)		S-3	4.4	6/27/18	333-224523
4.24	Form of Master Registered Global Senior Medium-Term Note, Series N (prior to August 2021)		S-3	4.5	6/27/18	333-224523
4.25	Form of Registered Global Senior Medium-Term Note, Series N (from August 2021)		S-3	4.4	8/2/21	333-257399
4.26	Form of Master Registered Global Senior Medium-Term Note, Series N (from August 2021)		S-3	4.5	8/2/21	333-257399
4.27	Indenture dated as of June 27, 2018 (for subordinated debt securities) between the registrant and The Bank of New York Mellon Trust Company, N.A.		S-3	4.6	6/27/18	333-224523
4.28	Form of Registered Global Subordinated Medium-Term Note, Series N (prior to August 2021)		S-3	4.7	6/27/18	333-224523
4.29	Form of Registered Global Subordinated Medium-Term Note, Series N (from August 2021)		S-3	4.7	8/2/21	333-257399
	Registrant and its subsidiaries have other long-term debt agreements, but these are omitted pursuant to Item 601(b)(4)(iii) of Regulation S-K. Copies of these agreements will be furnished to the Commission on request					
4.30	Description of the Corporation's Securities	1				
10.1	Bank of America Pension Restoration Plan, as amended and restated effective January 1, 2009 (Pension Restoration Plan)	2	10-K	10(c)	2/27/09	1-6523
10.2	First Amendment to the Pension Restoration Plan dated December 18, 2009	2	10-K	10(c)	2/26/10	1-6523
10.3	Second Amendment to the Pension Restoration Plan dated June 29, 2012	2	10-K	10(a)	2/28/13	1-6523
10.4	Third Amendment to the Pension Restoration Plan dated March 26, 2013	2	10-K	10.4	2/19/20	1-6523
10.5	Fourth Amendment to the Pension Restoration Plan dated August 22, 2013	2	10-K	10.5	2/19/20	1-6523
10.6	Fifth Amendment to the Pension Restoration Plan dated December 5, 2014	2	10-K	10.6	2/19/20	1-6523
10.7	Sixth Amendment to the Pension Restoration Plan dated December 15, 2016	2	10-K	10.7	2/19/20	1-6523
10.8	NationsBank Corporation Benefit Security Trust dated as of June 27, 1990	2	10-K	10(t)	3/27/91	1-6523
10.9	First Supplement to NationsBank Corporation Benefit Security Trust dated as of November 30, 1992	2	10-K	10(v)	3/24/93	1-6523
10.10	NationsBank Corporation Benefit Security Trust Trustee Removal/Appointment Agreement dated as of December 19, 1995	2	10-K	10(o)	3/29/96	1-6523
10.11	Bank of America Deferred Compensation Plan (formerly known as the Bank of America 401(k) Restoration Plan) as amended and restated effective January 1, 2015	2	10-K	10(c)	2/25/15	1-6523
10.12	First Amendment to the Bank of America Deferred Compensation Plan (formerly known as the Bank of America 401(k) Restoration Plan), as amended and restated effective January 1, 2015	2	10-K	10(vv)	2/24/16	1-6523
10.13	Second Amendment to the Bank of America Deferred Compensation Plan (formerly known as the Bank of America 401(k) Restoration Plan), as amended and restated effective January 1, 2015	2	S-8	4(c)	11/19/19	333-234780
10.14	Third Amendment to the Bank of America Deferred Compensation Plan (formerly known as the Bank of America 401(k) Restoration Plan), as amended and restated effective January 1, 2015	2	10-K	10.14	2/19/20	1-6523
10.15	Fourth Amendment to the Bank of America Deferred Compensation Plan (formerly known as the Bank of America 401(k) Restoration Plan), as amended and restated effective January 1, 2015	2	10-K	10.15	2/24/21	1-6523
10.16	Bank of America Executive Incentive Compensation Plan, as amended and restated effective December 10, 2002	2	10-K	10(g)	3/3/03	1-6523
10.17	Amendment to Bank of America Executive Incentive Compensation Plan, dated January 23, 2013	2	10-K	10(d)	2/28/13	1-6523
10.18	Bank of America Director Deferral Plan, as amended and restated effective January 1, 2005	2	10-K	10(g)	2/28/07	1-6523
10.19	Bank of America Director Deferral Plan, as amended and restated effective January 1, 2019	2	10-K	10(f)	2/26/19	1-6523
10.20	Bank of America Corporation Key Employee Equity Plan (formerly known as the Key Associate Stock Plan), as amended and restated effective May 6, 2015 (2015 KEEP)	2	8-K	10.2	5/7/15	1-6523
10.21	First Amendment to the 2015 KEEP dated December 19, 2018	2	10-K	10(mm)	2/26/19	1-6523
10.22	Second Amendment to the 2015 KEEP dated April 24, 2019	2	8-K	10.1	4/24/19	1-6523

			Incorporated by Reference			
Exhibit No.	Description	Notes	Form	Exhibit	Filing Date	File No.
10.23	Bank of America Corporation Equity Plan (formerly known as the Key Employee Equity Plan), as amended and restated effective April 20, 2021 (2021 BACEP)	2	8-K	10.1	4/22/21	1-6523
10.24	Form of Cash-settled Restricted Stock Units Award Agreement (February 2016 and subsequent grants) under the 2015 KEEP	2	10-Q	10(a)	5/2/16	1-6523
10.25	Form of Restricted Stock Award Agreement for Non-Employee Directors under the 2015 KEEP and the 2021 BACEP	2	10-K	10(h)	2/26/19	1-6523
10.26	Form of Time-based Restricted Stock Units Award Agreement (February 2020) under the 2015 KEEP	2	10-Q	10.1	5/1/20	1-6523
10.27	Form of Performance Restricted Stock Units Award Agreement (February 2020) under the 2015 KEEP	2	10-Q	10.2	5/1/20	1-6523
10.28	Form of Time-based Restricted Stock Units Award Agreement (February 2021) under the 2015 KEEP	2	10-Q	10.1	4/29/21	1-6523
10.29	Form of Performance Restricted Stock Units Award Agreement (February 2021) under the 2015 KEEP	2	10-Q	10.2	4/29/21	1-6523
10.30	Form of Cash-settled Restricted Stock Units Award Agreement under the 2021 BACEP	2	10-K	10.32	2/22/22	1-6523
10.31	Form of Time-Based Restricted Stock Units Award Agreement under the 2021 BACEP	2	10-K	10.33	2/22/22	1-6523
10.32	Form of Performance-Based Restricted Stock Units Award Agreement under the 2021 BACEP	2	10-K	10.34	2/22/22	1-6523
10.33	Form of Phantom Restricted Stock Units Award Agreement	2	10-K	10.35	2/22/22	1-6523
10.34	Amendment to various plans in connection with FleetBoston Financial Corporation merger dated October 27, 2003	2	10-K	10(v)	3/1/04	1-6523
10.35	FleetBoston Supplemental Executive Retirement Plan effective December 31, 2004	2	10-K	10(r)	3/1/05	1-6523
10.36	FleetBoston Executive Deferred Compensation Plan No. 2 effective December 16, 2003	2	10-K	10(u)	3/1/05	1-6523
10.37	FleetBoston Executive Supplemental Plan effective December 31, 2004	2	10-K	10(v)	3/1/05	1-6523
10.38	Retirement Income Assurance Plan for Legacy Fleet, as amended and restated effective January 1, 2009	2	10-K	10(p)	2/26/10	1-6523
10.39	First Amendment to the Retirement Income Assurance Plan for Legacy Fleet, as amended and restated effective January 1, 2009	2	10-K	10(l)	2/28/13	1-6523
10.40	Officer's Certificate of Global Compensation, Benefits and Shared Services Executive Regarding Wanger Divestiture	2	10-K	10(c)	2/25/11	1-6523
10.41	Trust Agreement for the FleetBoston Executive Deferred Compensation Plans No. 1 and 2 dated December 17, 1997	2	10-K	10(x)	3/1/05	1-6523
10.42	Trust Agreement for the FleetBoston Executive Supplemental Plan dated June 19, 1996	2	10-K	10(y)	3/1/05	1-6523
10.43	Trust Agreement for the FleetBoston Retirement Income Assurance Plan and the FleetBoston Supplemental Executive Retirement Plan dated June 19, 1996	2	10-K	10(z)	3/1/05	1-6523
10.44	FleetBoston Directors Deferred Compensation and Stock Unit Plan effective January 1, 2004	2	10-K	10(aa)	3/1/05	1-6523
10.45	BankBoston Corporation and its Subsidiaries Deferred Compensation Plan dated December 24, 2001	2	10-K	10(cc)	3/1/05	1-6523
10.46	BankBoston Director Stock Award Plan effective July 1, 1998	2	10-K	10(hh)	3/1/05	1-6523
10.47	BankBoston Corporation Directors' Deferred Compensation Plan effective March 1, 1988	2	10-K	10(ii)	3/1/05	1-6523
10.48	BankBoston, N.A. Directors' Deferred Compensation Plan effective March 1, 1988	2	10-K	10(jj)	3/1/05	1-6523
10.49	Description of BankBoston Director Retirement Benefits Exchange Program	2	10-K	10(ll)	3/1/05	1-6523
10.50	Global amendment to definition of "change in control" or "change of control," together with a list of plans affected by such amendment	2	10-K	10(oo)	3/1/05	1-6523
10.51	Employment Agreement dated October 27, 2003 between registrant and Brian T. Moynihan	2	S-4	10(d)	12/4/03	333-110924
10.52	Cancellation Agreement dated October 26, 2005 between registrant and Brian T. Moynihan	2	8-K	10.1	10/26/05	1-6523
10.53	Agreement Regarding Participation in the Fleet Boston Supplemental Executive Retirement Plan dated October 26, 2005 between registrant and Brian T. Moynihan	2	8-K	10.2	10/26/05	1-6523
10.54	Employment Letter dated May 1, 2008 between Merrill Lynch & Co., Inc. and Thomas K. Montag and Summary of Agreement with respect to Post-Employment Medical Coverage	2	10-K	10(bbb)	2/26/10	1-6523
10.55	Securities Purchase Agreement dated August 25, 2011 between registrant and Berkshire Hathaway Inc. (including forms of the certificate of Designations, Warrant and Registration Rights Agreement)		8-K	1.1	8/25/11	1-6523
10.56	Amended and Restated Aircraft Time Sharing Agreement (Multiple Aircraft) dated June 26, 2018 between Bank of America, N.A. and Brian T. Moynihan	2	10-Q	10	7/30/18	1-6523

			Incorporated by Reference			
Exhibit No.	Description	Notes	Form	Exhibit	Filing Date	File No.
10.57	Form of Aircraft Time Sharing Agreement (Multiple Aircraft) between Bank of America, N.A. and certain executive officers of the Corporation, including certain Named Executive Officers	2	10-Q	10(b)	7/29/19	1-6523
10.58	Amended Exhibit B to the Form of Aircraft Time Sharing Agreement (Multiple Aircraft) between Bank of America, N.A. and certain executive officers of the Corporation, including certain Named Executive Officers	2	10-Q	10.1	10/28/22	1-6523
10.59	Letter Agreement dated November 9, 2021 between the Corporation and James P. DeMare	2, 3	10-Q	10.1	4/29/22	1-6523
10.60	Employment Offer Letter dated March 4, 2019 between the Corporation and Matthew M. Koder	2, 3	10-Q	10.2	4/29/22	1-6523
10.61	Letter of Understanding dated March 4, 2019 between the Corporation and Matthew M. Koder	2, 3	10-Q	10.3	4/29/22	1-6523
10.62	Appointment Letter dated December 1, 2022 between Bank of America Europe Designated Activity Company and Paul M. Donofrio with respect to board service as Chair and Non-Executive Director	1, 2, 3				
21	Direct and Indirect Subsidiaries of Bank of America Corporation As of December 31, 2022	1				
22	Subsidiary Issuers of Guaranteed Securities	1				
23	Consent of PricewaterhouseCoopers LLP	1				
24	Power of Attorney	1				
31.1	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	1				
31.2	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	1				
32.1	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	4				
32.2	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	4				
99.1	Bank of America Corporation Corporate Policy Regarding Seeking Stockholder Approval of Future Severance Agreements	1				
101.INS	Inline XBRL Instance Document	5				
101.SCH	Inline XBRL Taxonomy Extension Schema Document	1				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	1				
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	1				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	1				
101.DEF	Inline XBRL Taxonomy Extension Definitions Linkbase Document	1				
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					

(1) Filed Herewith.
(2) Exhibit is a management contract or compensatory plan or arrangement.
(3) As permitted by Regulation S-K, Item 601(b)(10)(iv) of the Securities Exchange Act of 1934, as amended, certain portions of this exhibit have been redacted from the publicly filed document.
(4) Furnished herewith. This exhibit shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that Section. Such exhibit shall not be deemed incorporated into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.
(5) The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.

Item 16. Form 10-K Summary

Not applicable.

Signatures

Pursuant to the requirements of Section 13 of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 22, 2023

Bank of America Corporation

By: /s/ Brian T. Moynihan
Brian T. Moynihan
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Brian T. Moynihan Brian T. Moynihan	Chief Executive Officer, President, Chair and Director (Principal Executive Officer)	February 22, 2023
*/s/ Alastair M. Borthwick Alastair M. Borthwick	Chief Financial Officer (Principal Financial Officer)	February 22, 2023
*/s/ Rudolf A. Bless Rudolf A. Bless	Chief Accounting Officer (Principal Accounting Officer)	February 22, 2023
*/s/ Sharon L. Allen Sharon L. Allen	Director	February 22, 2023
*/s/ José E. Almeida José E. Almeida	Director	February 22, 2023
*/s/ Frank P. Bramble, Sr. Frank P. Bramble, Sr.	Director	February 22, 2023
*/s/ Pierre J.P. de Weck Pierre J.P. de Weck	Director	February 22, 2023
*/s/ Arnold W. Donald Arnold W. Donald	Director	February 22, 2023
*/s/ Linda P. Hudson Linda P. Hudson	Director	February 22, 2023
*/s/ Monica C. Lozano Monica C. Lozano	Director	February 22, 2023
*/s/ Lionel L. Nowell III Lionel L. Nowell III	Director	February 22, 2023
*/s/ Denise L. Ramos Denise L. Ramos	Director	February 22, 2023

Signature	Title	Date
*/s/ Clayton S. Rose Clayton S. Rose	Director	February 22, 2023
*/s/ Michael D. White Michael D. White	Director	February 22, 2023
*/s/ Thomas D. Woods Thomas D. Woods	Director	February 22, 2023
*/s/ R. David Yost R. David Yost	Director	February 22, 2023
*/s/ Maria T. Zuber Maria T. Zuber	Director	February 22, 2023
*By /s/ Ross E. Jeffries, Jr. Ross E. Jeffries, Jr. Attorney-in-Fact		

Exhibit 31.1

CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002
FOR THE CHIEF EXECUTIVE OFFICER

I, Brian T. Moynihan, certify that:

1. I have reviewed this Annual Report on Form 10-K of Bank of America Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

/s/ Brian T. Moynihan
Brian T. Moynihan
Chief Executive Officer

Exhibit 31.2

CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002
FOR THE CHIEF FINANCIAL OFFICER

I, Alastair M. Borthwick, certify that:

1. I have reviewed this Annual Report on Form 10-K of Bank of America Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

/s/ Alastair M. Borthwick
Alastair M. Borthwick
Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

I, Brian T. Moynihan, state and attest that:

1. I am the Chief Executive Officer of Bank of America Corporation (the registrant).
2. I hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:
    - the Annual Report on Form 10-K of the registrant for the year ended December 31, 2022 (the periodic report) containing financial statements fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
    - the information contained in the periodic report fairly presents, in all material respects, the financial condition and results of operations of the registrant.

Date: February 22, 2023

/s/ Brian T. Moynihan
Brian T. Moynihan
Chief Executive Officer

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

I, Alastair M. Borthwick, state and attest that:

1. I am the Chief Financial Officer of Bank of America Corporation (the registrant).
2. I hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:
    - the Annual Report on Form 10-K of the registrant for the year ended December 31, 2022 (the periodic report) containing financial statements fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
    - the information contained in the periodic report fairly presents, in all material respects, the financial condition and results of operations of the registrant.

Date: February 22, 2023

/s/ Alastair M. Borthwick
Alastair M. Borthwick
Chief Financial Officer

Exhibit 3.2

Bank of America Corporation

BYLAWS

OF

BANK OF AMERICA CORPORATION

As Amended and Restated by the Board of Directors
on December 14, 2022

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BYLAWS OF BANK OF AMERICA CORPORATION

ARTICLE I
DEFINITIONS

Section 1. Definitions. In these Bylaws, unless otherwise specifically provided:

(a) "Advancement of Expenses" has the meaning set forth in Section 2 of Article VIII of these Bylaws.

(b) "Affiliate" means any corporation, partnership, limited liability company, association, trust or other entity or organization that is Controlled By the Corporation.

(c) "Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended and restated from time to time, including any certificates of designation filed with the Delaware Secretary of State setting forth the terms of preferred stock of the Corporation.

(d) "Chief Audit Executive" has the meaning set forth in Section 1 of Article VI of these Bylaws.

(e) "Common Stock" means the common stock of the Corporation.

(f) "Controlled By" means possession, directly or indirectly, of the power to direct or cause the direction and management of the policies of an entity, whether through the ownership of over fifty (50) percent of the voting securities or other ownership interest, by contract or otherwise.

(g) "Corporation" means Bank of America Corporation, a Delaware corporation, and any successor thereto.

(h) "Delivery Date" has the meaning set forth in Section 2(c) of Article III of these Bylaws.

(i) "Designated Officers" has the meaning set forth in Section 2 of Article X of these Bylaws.

(j) "DGCL" means the General Corporation Law of the State of Delaware, as the same now exists or may hereafter be amended.

(k) "Eligible Stockholder" has the meaning set forth in Section 9(a) of Article IV of these Bylaws.

(l) "Emergency" has the meaning set forth in Section 1 of Article X of these Bylaws.

(m) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(n) "Executive Officer" has the meaning set forth in Section 1 of Article VI of these Bylaws.

(o) "Federal Reserve Board" has the meaning set forth in Section 12(c)(iii)(E) of Article III of these Bylaws.

(p) "Final Adjudication" has the meaning set forth in Section 2 of Article VIII of these Bylaws.

(q) "Final Proxy Access Nomination Date" has the meaning set forth in Section 9(b) of Article IV of these Bylaws.

(r) "Indemnitee" has the meaning set forth in Section 1 of Article VIII of these Bylaws.

(s) "Lead Independent Director" means the independent director appointed by the independent members of the Board of Directors in accordance with Article IV, Section 8 of these Bylaws.

(t) "Meeting Record Date" has the meaning set forth in Section 2(d) of Article III of these Bylaws.

(u) "Notice of Proxy Access Nomination" has the meaning set forth in Section 9(b) of Article IV of these Bylaws.

(v) "NYSE" has the meaning set forth in Section 9 of Article III of these Bylaws.

(w) "Officer" has the meaning set forth in Section 1 of Article VI of these Bylaws.

(x) "OCC" has the meaning set forth in Section 12(c)(iii)(E) of Article III of these Bylaws.

(y) "Permitted Number" has the meaning set forth in Section 9(d) of Article IV of these Bylaws.

(z) "Proceeding" has the meaning set forth in Section 1 of Article VIII of these Bylaws.

(aa) "Qualifying Fund" has the meaning set forth in Section 9(e) of Article IV of these Bylaws.

(bb) "Required Shares" has the meaning set forth in Section 9(e) of Article IV of these Bylaws.

(cc) "Requisite Percent" has the meaning set forth in Section 2(a)(i) of Article III of these Bylaws.

(dd) “Shares” means the Common Stock and other units into which equity interests in the Corporation are divided.

(ee) “Similar Item” has the meaning set forth in Section 2(c) of Article III of these Bylaws.

(ff) “Special Meeting Request” has the meaning set forth in Section 2(a)(i) of Article III of these Bylaws.

(gg) “Statement” has the meaning set forth in Section 9(h) of Article IV of these Bylaws.

(hh) “Stockholder” means the person in whose name Shares are registered in the records of the Corporation.

(ii) “Stockholder Nominee” has the meaning set forth in Section 9(a) of Article IV of these Bylaws.

(jj) “Stockholder Requested Special Meeting” has the meaning set forth in Section 2(a)(i) of Article III of these Bylaws.

(kk) “Stockholder Special Meeting Request” has the meaning set forth in Section 2(b) of Article III of these Bylaws.

(ll) “Undertaking” has the meaning set forth in Section 2 of Article VIII of these Bylaws.

Section 2. Cross-Reference to the DGCL. If any term used in these Bylaws and not otherwise defined herein is defined for purposes of the DGCL, such definition shall apply for purposes of these Bylaws, unless the context shall clearly require otherwise.

ARTICLE II
OFFICES

Section 1. Principal Place of Business. The principal place of business of the Corporation shall be located in the City of Charlotte, County of Mecklenburg, State of North Carolina.

Section 2. Registered Office. The registered office of the Corporation required by the DGCL to be maintained in the State of Delaware is The Corporation Trust Center, 1209 Orange Street, Wilmington, New Castle County, Delaware, 19801. The name of the Corporation’s registered agent at such address is The Corporation Trust Company.

Section 3. Other Offices. The Corporation may have offices at such other places, either within or without the State of Delaware, as the Board of Directors may from time to time determine or as the affairs of the Corporation may require from time to time.

ARTICLE III
STOCKHOLDERS

Section 1. Annual Meeting. The annual meeting of the Stockholders shall be held each year at a date and hour fixed from time to time by resolution of the Board of Directors for the purpose of electing directors and for the transaction of such other proper business as may come before the meeting. The Board of Directors may postpone, reschedule or cancel any annual meeting of Stockholders previously scheduled by the Board of Directors.

Section 2. Special Meetings.

(a) General.

(i) Special meetings of the Stockholders, for any purpose or purposes, unless otherwise prescribed by the DGCL, may be called by the Board of Directors, the Chair of the Board, the Chief Executive Officer, the President, or by the Secretary acting under instructions of the Board of Directors, the Chair of the Board, the Chief Executive Officer, or the President, subject to any applicable law or regulation (each, a "Special Meeting Request"). A special meeting of Stockholders shall be called by the Secretary upon the written request of Stockholders, including a written request made by one or more Stockholders on behalf of any beneficial owner of Common Stock, representing ownership of at least ten (10) percent of the outstanding Common Stock of the Corporation (the "Requisite Percent"), subject to Subsection (b) of this Section 2 (a "Stockholder Requested Special Meeting"). Business transacted at any special meeting of Stockholders shall be limited to the purposes stated in the notice. The Board of Directors may postpone, reschedule or cancel any special meeting of the Stockholders previously scheduled by the Board of Directors.

(ii) For purposes of calculating the Requisite Percent, "ownership" shall be deemed to consist of and include only the outstanding Common Stock as to which a person possesses both (A) the full voting rights pertaining to the Common Stock and (B) the full economic interest in (including the opportunity for profit and risk of loss on) such Common Stock; provided that the ownership of Common Stock calculated in accordance with clauses (A) and (B) shall not include any Common Stock (x) that a person has sold in any transaction that has not been settled or closed, (y) that a person has borrowed or purchased pursuant to an agreement to resell or (z) subject to any option, warrant, forward contract, swap, contract of sale, other derivative or similar agreement entered into by a person, whether any such instrument or agreement is to be settled with Common Stock or with cash based on the notional amount or value of Common Stock, in any

such case which instrument or agreement has, or is intended to have, the purpose or effect of (1) reducing in any manner, to any extent or at any time in the future, the person's full right to vote or direct the voting of any such Common Stock, and/or (2) hedging, offsetting or altering to any degree gain or loss arising from the full economic ownership of such person's Common Stock. "Ownership" shall include Common Stock held in the name of a nominee or other intermediary so long as the person claiming ownership of such Common Stock retains the right to instruct how the Common Stock is voted with respect to the election of directors and possesses the full economic interest in the Common Stock, provided that this provision shall not alter the obligations of any Stockholder to provide the notice described in Subsection (b) of this Section 2. Ownership of Common Stock shall be deemed to continue during any period in which Common Stock has been loaned if the person claiming ownership may terminate the Common Stock lending within three (3) days and during any period in which any voting power has been delegated by means of a proxy, power of attorney or other instrument or arrangement which is revocable at any time without condition. The determination of the extent of "ownership" of Common Stock for purposes of this Section 2 shall be made in good faith by the Board of Directors, which determination shall be conclusive and binding on the Corporation and the Stockholders. The terms "owned," "owning" and other variations of the word "own" shall have correlative meanings.

(b) Stockholder Requested Special Meetings. In order for a Stockholder Requested Special Meeting to be called, one or more requests for a special meeting (each, a "Stockholder Special Meeting Request," and collectively, the "Stockholder Special Meeting Requests") must be signed by Stockholders owning in the aggregate not less than the Requisite Percent (or their duly authorized agents) and must be delivered to the Secretary. The Stockholder Special Meeting Request(s) shall be delivered to the Secretary at the principal executive offices of the Corporation by registered mail, return receipt requested. Each Stockholder Special Meeting Request shall (i) set forth a statement of the specific purpose(s) of the meeting and the matters proposed to be acted on at it, (ii) bear the date of signature of each such Stockholder (or duly authorized agent) signing the Stockholder Special Meeting Request, (iii) set forth (A) the name and address of each Stockholder signing such request and of any beneficial owner on whose behalf the Stockholder Special Meeting Request is signed, (B) the amount of Common Stock owned of record and beneficially by each such Stockholder and (C) include documentary evidence of such Stockholder's record and beneficial ownership of such Common Stock, (iv) set forth all information relating to each such Stockholder that must be disclosed with respect to persons involved in solicitations of proxies for election of directors in an election contest (even if the Stockholder Requested Special Meeting does not involve an election contest), or is otherwise required, in each case, pursuant to Regulation 14A under the Exchange Act, (v) contain the information required by Article III, Section 12(c)(i)-(iii) of these Bylaws as to each such Stockholder and any beneficial owners on whose behalf the Stockholder Special Meeting Request

is signed, and the information required by Article III, Section 12(c)(iv) and (v) as to any nominees and other business proposed to be presented at such meeting, and (vi) set forth an acknowledgment by each such Stockholder that the Stockholder Special Meeting Request shall be deemed to be revoked (and any meeting scheduled in response may be canceled) if the Common Stock owned by such persons does not represent ownership of at least the Requisite Percent at all times between the date on which such Stockholder Special Meeting Request is delivered and the date of the applicable Stockholder Requested Special Meeting, as well as an agreement by each such Stockholder to notify the Corporation immediately if such Stockholder ceases to own any Common Stock. Any requesting Stockholder may revoke a Stockholder Special Meeting Request at any time by written revocation delivered to the Secretary at the principal executive offices of the Corporation; provided, however, that if following such revocation there are Stockholder Special Meeting Requests which have not been revoked from Stockholders holding in the aggregate less than the Requisite Percent, the Board of Directors, in its discretion, may cancel the Stockholder Requested Special Meeting. If none of the Stockholders who submitted a Stockholder Special Meeting Request for a Stockholder Requested Special Meeting appears or sends a qualified representative (as defined below in Article III, Section 12(g)) to present the nominations proposed to be presented or other business proposed to be conducted at the Stockholder Requested Special Meeting, the Corporation need not present such nominations or other business for a vote at such Stockholder Requested Special Meeting.

In determining whether a Stockholder Requested Special Meeting has been requested by Stockholders (including by one or more Stockholders on behalf of any beneficial owners of Common Stock) owning in the aggregate not less than the Requisite Percent as of the date of such written request to the Secretary, multiple Stockholder Special Meeting Requests delivered to the Secretary will be considered together only if (i) each request identifies substantially the same purpose or purposes of the proposed Stockholder Requested Special Meeting and substantially the same matters proposed to be acted on at the proposed Stockholder Requested Special Meeting (in each case to be determined by the Board of Directors), and (ii) such Stockholder Special Meeting Requests have been dated and delivered to the Secretary within sixty (60) days of the earliest dated Stockholder Special Meeting Request.

(c) Calling of a Special Meeting. The Secretary shall not be required to call a special meeting of Stockholders if (i) the Board of Directors calls an annual or special meeting of Stockholders to be held not later than sixty (60) days after the date on which a valid Special Meeting Request, Stockholder Special Meeting Request or multiple Stockholder Special Meeting Requests constituting at least the Requisite Percent have been delivered to the Secretary (the "Delivery Date"); or (ii) the Special Meeting Request or the Stockholder Special Meeting Request (A) is received by the Secretary during the period commencing seventy-five (75) days prior to the first anniversary of the date of the immediately preceding annual meeting and ending on the date of the next annual meeting; (B) contains an identical or substantially similar item (a "Similar Item") to an item that was presented at any meeting of Stockholders held within one hundred and twenty (120) days prior to the Delivery Date (and, for purposes of this clause (B) the election of directors shall be deemed a "Similar Item" with respect to all items of business involving the election or removal of directors); (C) relates to an item of business that is not a proper subject

for action by the party requesting the special meeting under applicable law; (D) was made in a manner that involved a violation of Regulation 14A under the Exchange Act or other applicable law; or (E) does not comply with the provisions of this Section 2. The Secretary may call a special meeting of Stockholders at any time as requested by any government or regulatory agency.

(d) Holding a Special Meeting. Except as provided in the next sentence, any special meeting shall be held at such date, time and place, within or without the State of Delaware, as may be fixed by the Board of Directors in accordance with these Bylaws and the DGCL. In the case of a Stockholder Requested Special Meeting, such meeting shall be held at such date, time and place as may be fixed by the Board of Directors; provided, however, that the date of any Stockholder Requested Special Meeting shall be not less than ten (10) days nor more than sixty (60) days after the record date for such meeting (the "Meeting Record Date"), which shall be fixed in accordance with Article III, Section 5 of these Bylaws; provided further that, if the Board of Directors fails to designate, within ten (10) days after the Delivery Date, a date and time for a Stockholder Requested Special Meeting, then such meeting shall be held at 9:00 a.m. local time on the sixtieth (60^{th}) day after the Meeting Record Date (or, if that day shall not be a business day, then on the next preceding business day); and provided further that in the event that the Board of Directors fails to designate a place for a Stockholder Requested Special Meeting within ten (10) days after the Meeting Record Date, then such meeting shall be held at the Corporation's principal executive offices. In fixing a date and time for any Stockholder Requested Special Meeting the Board of Directors may consider such factors as it deems relevant within the good faith exercise of business judgment, including, without limitation, the nature of the matters to be considered, the facts and circumstances surrounding any request for meeting and any plan of the Board of Directors to call an annual meeting or a special meeting.

(e) Business Transacted at a Special Meeting. Business to be transacted at a special meeting may only be brought before the meeting pursuant to the Corporation's notice of meeting. Business transacted at any Stockholder Requested Special Meeting shall be limited to the purpose(s) stated in the Stockholder Special Meeting Request(s); provided, however, that nothing herein shall prohibit the Board of Directors from submitting matters to the Stockholders at any Stockholder Requested Special Meeting.

Section 3. Place of Meeting. The Board of Directors, the Chair of the Board, the Chief Executive Officer or the President of the Corporation, or the Secretary acting under instructions of the Board of Directors, the Chair of the Board, the Chief Executive Officer or the President, may designate any place, either within or without the State of Delaware, as the place of meeting for any annual meeting of Stockholders or for any special meeting of Stockholders or may, in its sole discretion determine that a meeting of Stockholders shall in addition or instead be held by means of remote communication in accordance with the DGCL.

Section 4. Notice to Stockholders. Except as otherwise provided herein or permitted by law, whenever Stockholders are required or permitted to take any action at a meeting, a notice of the meeting shall be given which shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which the Stockholders and proxyholders may be deemed

to be present in person and vote at such meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Any notice to Stockholders shall be effective if given by a form of electronic transmission in the manner and to the extent permitted by the DGCL.

Unless otherwise provided or permitted by law, the Certificate of Incorporation or these Bylaws, the notice of any meeting shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each Stockholder entitled to vote at such meeting. Notwithstanding the foregoing, notice may be given to Stockholders sharing an address in the manner and to the extent permitted by the DGCL and by the "householding" rules set forth in Rule 14a-3(e) under the Exchange Act. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the Stockholder at such Stockholder's address as it appears on the records of the Corporation.

Any meeting of Stockholders, annual or special, may adjourn from time to time to reconvene at the same or another place. When a meeting is adjourned to another time or place, notice need not be given of the adjourned meeting if the date, time and place, if any, of the adjourned meeting and the means of remote communications, if any, by which the Stockholders and proxyholders may be deemed to be present in person and voting at such meeting are announced at the meeting at which the adjournment is taken or are provided in any other manner permitted by the DGCL. At the adjourned meeting the Corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days, a notice of the adjourned meeting shall be given to each Stockholder entitled to vote at the meeting. If after the adjournment a new record date for determining Stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix a new record date for notice in accordance with Article III, Section 5 of these Bylaws and notice of the adjourned meeting shall be given to each Stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

A Stockholder may waive any notice required by the DGCL, the Certificate of Incorporation or these Bylaws before or after the date and time stated in the notice. Attendance of a Stockholder at a meeting shall constitute a waiver of notice of such meeting, except when the Stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

Section 5. Fixing of Record Date. For the purpose of determining Stockholders entitled to notice of or to vote at any meeting of Stockholders or any adjournment thereof, or Stockholders entitled to receive payment of any dividend or other distribution, or in order to make a determination of Stockholders for any other proper purpose, the Board of Directors may fix in advance a date for any such determination of Stockholders, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which date in any case shall not be more than 60 days and, in case of a meeting of Stockholders, not less than ten days, prior to the date of such meeting or on which such action is to be taken. If no record date is fixed

for the determination of Stockholders entitled to notice of or to vote at a meeting of Stockholders, the close of business on the day before the first notice is given, or if notice is waived, the close of business on the day before the date of such meeting shall be the record date. If no record date is fixed for the determination of Stockholders entitled to receive payment of a dividend or other distribution or any other proper purpose, the close of business on the day on which the Board of Directors adopts the resolution relating thereto shall be the record date. When a determination of Stockholders entitled to vote at any meeting of Stockholders has been made as provided in this Section 5, such determination shall apply to any adjournment thereof or any postponement that is to a date not more than sixty (60) days after the record date, in each case unless the Board of Directors fixes a new record date.

Section 6. Stockholders List. The Corporation shall prepare, no later than the tenth day before each meeting of Stockholders, a complete list of the Stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each Stockholder and the number of Shares registered in the name of each Stockholder. The list of Stockholders shall be open to the examination of any Stockholder, for any purpose germane to the meeting, for a period of ten days ending on the day before the meeting date during ordinary business hours, at the principal place of business of the Corporation, or the Corporation may place the Stockholders list on a reasonably accessible electronic network as permitted by the DGCL. Except as otherwise provided by law, the stock ledger shall be the only evidence as to who are the Stockholders entitled to examine the list of Stockholders required by this Section 6 or to vote in person or by proxy at any meeting of Stockholders.

Section 7. Quorum. Except as otherwise required by law, a majority of the voting power of the outstanding Shares entitled to vote at the meeting, present in person or represented by proxy, shall constitute a quorum at a meeting of Stockholders. Where a separate vote by a class or series or classes or series is required, a majority of the votes entitled to be cast by the outstanding Shares of such class or series or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on that matter. In the absence of a quorum, such meeting may be adjourned from time to time by the chair of the meeting or upon the approval of the majority of the voting power of the outstanding Shares present and entitled to vote at the meeting, even if less than a quorum, without notice other than announcement at the meeting as provided in Article III, Section 4 or as otherwise required by Article III. Once a quorum is present at a meeting, it is deemed present for the remainder of the meeting and for any adjournment of that meeting, notwithstanding the withdrawal of enough Stockholders to leave less than a quorum.

Section 8. Proxies. Each Stockholder entitled to vote at a meeting of Stockholders or to express consent or dissent to corporate action without a meeting may authorize another person or persons to act for such Stockholder by proxy, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period.

Without limiting the manner in which a Stockholder may authorize another person or persons to act for such Stockholder as proxy pursuant to the previous paragraph, the following shall constitute a valid means by which a Stockholder may grant such authority:

(1) A Stockholder, or such Stockholder's authorized officer, director, employee or agent, may execute a document authorizing another person or persons to act for such Stockholder as proxy.

(2) A Stockholder may authorize another person or persons to act for such Stockholder as proxy by transmitting or authorizing the transmission of an electronic transmission to the person who will be the holder of the proxy or to a proxy solicitation firm, proxy support service organization or like agent duly authorized by the person who will be the holder of the proxy to receive such transmission, provided that any such transmission must either set forth or be submitted with information from which it can be determined that the transmission was authorized by the Stockholder. If it is determined that such transmissions are valid, the inspectors or, if there are no inspectors, such other persons making that determination shall specify the information upon which they relied.

(3) The authorization of a person to act as a proxy may be documented, signed and delivered in accordance with the DGCL, provided that such authorization shall set forth, or be delivered with information enabling the Corporation to determine, the identity of the Stockholder granting such authorization.

Any copy, facsimile telecommunication or other reliable reproduction of the document (including electronic transmission) created pursuant to the previous paragraph of this Section 8 may be substituted or used in lieu of the original document for any and all purposes for which the original document could be used, provided that such copy, facsimile telecommunication or other reproduction shall be a complete reproduction of the entire original document.

A duly executed proxy shall be irrevocable if it states that it is irrevocable and if, and only as long as, it is coupled with an interest sufficient in law to support an irrevocable power. A proxy may be made irrevocable regardless of whether the interest with which it is coupled is an interest in the stock itself or an interest in the Corporation generally.

A Stockholder may revoke any proxy which is not irrevocable by attending the meeting and voting in person or by delivering to the Secretary a revocation of the proxy or a new proxy bearing a later date.

Section 9. Voting of Shares. Except as otherwise provided by the Certificate of Incorporation, each outstanding Share of Common Stock is entitled to one vote on each matter voted on at a Stockholders meeting. Other Shares are entitled to vote only as provided in the Certificate of Incorporation or the DGCL. If a quorum exists, action on a matter (other than election of

directors, which is set forth in Section 10 of this Article III, or the chair of a meeting of stockholders, which is set forth in Section 11 of this Article III) is approved if the votes cast favoring an action exceed the votes cast opposing the action; provided, however, if the Certificate of Incorporation, these Bylaws, the DGCL, the rules or regulations of the New York Stock Exchange ("NYSE") (unless the Corporation's Common Stock ceases to be listed on the NYSE and is listed on another exchange in which case such exchange's rules and regulations), or any law or regulation applicable to the Corporation or the action to be voted on requires a greater number of affirmative votes for approval of such matter, then action on such matter is approved if such greater number of votes favoring such action are cast.

Section 10. Required Vote for Directors. A nominee for director shall be elected to the Board of Directors if the votes cast for such nominee's election exceed the votes cast against such nominee's election; provided, however, that the directors shall be elected by a plurality of the votes cast at any meeting of Stockholders for which (a) the Secretary receives a notice that a Stockholder has nominated one or more persons for election to the Board of Directors pursuant to these Bylaws and (b) each such nomination has not been withdrawn by such Stockholder or such nominee on or prior to the date that is ten (10) days in advance of the date the Corporation files its definitive proxy statement (regardless of whether thereafter revised or supplemented) for such meeting of Stockholders with the Securities and Exchange Commission, as a result of which the total number of nominees for director exceeds the number of directors to be elected at such meeting of Stockholders. If no nominees for election to the Board of Directors are elected at an annual meeting, a special meeting of Stockholders shall be called for an election of directors in the manner provided in Article III, Section 2 of these Bylaws.

Section 11. Conduct of Meetings. The Chair of the Board shall preside as chair at each meeting of Stockholders or, in the Chair of the Board's absence, the Chief Executive Officer or President shall so preside. At the request of the Chair of the Board or the Chief Executive Officer or President, or in the event all are absent, such other Officer as the Board of Directors shall designate shall so preside at any such meeting. In the absence of a presiding officer determined in accordance with the preceding sentence, any person may be designated to so preside at a Stockholders meeting by a plurality vote of the Shares represented and entitled to vote at the meeting. The Secretary or, in the absence or at the request of the Secretary, any person designated by the person presiding at a Stockholders meeting shall act as secretary of such meeting. The chair of the meeting shall have the authority to adopt and enforce such rules or regulations for the conduct of meetings of Stockholders and the safety of those in attendance as deemed necessary, appropriate or convenient, including, without limitation, establishing: (a) an agenda or order of business for the meeting; (b) rules and procedures for maintaining order at the meeting and the safety of those present; (c) limitations on participation in the meeting to Stockholders entitled to vote at the meeting, their duly authorized and constituted proxies and such other persons as the chair of the meeting shall permit; (d) restrictions on entry to the meeting after the time fixed for the commencement thereof; (e) limitations on the time allotted for consideration of each agenda item and for questions and discussion by participants; and (f) procedures requiring attendees to provide the Corporation advance notice of their intent to attend the meeting.

The chair of the meeting, in addition to making any other determinations that may be appropriate to the conduct of the meeting, shall, if the facts warrant, determine and declare to the meeting that a matter or business was not properly brought before the meeting and if the chair should so determine, such chair shall so declare to the meeting that any such matter or business not properly brought before the meeting shall not be transacted or considered. The chair of the meeting may, for any reason, from time to time, adjourn any meeting of Stockholders, or recess any meeting of Stockholders, without notice other than announcement at the meeting except as provided in Article III, Section 4. The date and time of the opening and closing of the polls for each matter upon which the Stockholders will vote at the meeting shall be announced at the meeting.

Section 12. Notice of Stockholder Business and Nominations.

(a) At any meeting of the Stockholders, only nominations for the election of directors and the proposal of other business to be considered that has been properly brought before the meeting in accordance with the procedures set forth in this Section 12 may be conducted. Nominations for the election of directors and the proposal of other business at an annual meeting may be made only: (i) by or at the direction of the Board of Directors or any committee thereof; (ii) by a Stockholder of the Corporation who was a stockholder of record of the Corporation at the time the notice provided for in this Section 12 is delivered to the Secretary, who is entitled to vote at the meeting and who complies with this Section 12; or (iii) by an Eligible Stockholder (as defined in Article IV, Section 9 of these Bylaws) who complies with the requirements of Article IV, Section 9 of these Bylaws. For the avoidance of doubt, the foregoing clauses (ii) and (iii) shall be the exclusive means for a Stockholder to make director nominations at an annual meeting of Stockholders, and the foregoing clause (ii) shall be the exclusive means for a Stockholder to propose other business at an annual meeting of Stockholders (other than a proposal included in the Corporation's definitive proxy statement for the applicable Stockholders' meeting pursuant to and in compliance with Rule 14a-8 under the Exchange Act).

(b) For nominations or other business to be properly brought before an annual meeting by a Stockholder pursuant to clause (ii) of Subsection (a) of this Section 12, the Stockholder must have given timely and proper notice thereof in writing to the Secretary and any such proposed business other than the nominations of persons for election to the Board of Directors must constitute a proper matter for stockholder action. To be timely, a Stockholder's notice shall be delivered to the Secretary at the principal executive offices of the Corporation by registered mail, return receipt requested, not later than the close of business on the seventy-fifth (75th) day, nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting (provided, however, that in the event that the date of the annual meeting is more than thirty (30) days before or more than seventy (70) days after its anniversary date, notice by the Stockholder must be so delivered not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the seventy-fifth (75th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made by the Corporation). In no event shall the public

announcement of an adjournment or postponement of an annual meeting commence a new time period (or extend any time period) for the giving of a Stockholder's notice as described above. The number of persons a Stockholder may nominate for election as a director at the annual meeting (or in the case of a Stockholder giving the notice on behalf of a beneficial owner, the number of persons a Stockholder may nominate for election as a director at the annual meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such annual meeting.

(c) To be proper, the notice by a Stockholder must set forth:

(i) the name and address of the Stockholder and the beneficial owner (within the meaning of Section 13(d) of the Exchange Act), if any, on whose behalf the nomination is made or the business is proposed;

(ii) a representation that the Stockholder is a holder of record of the Corporation's Shares (including the number and class of Shares which are owned of record by such Stockholder and the beneficial owner, if any, on whose behalf the nomination is made or the other business is proposed) as of the date of the notice, entitled to vote at such meeting of Stockholders and intends to appear (or have a qualified representative appear) at such meeting to make such nomination or to propose such business;

(iii) as to the Stockholder giving the notice or, if the notice is given on behalf of a beneficial owner, as to such beneficial owner, and if such Stockholder or beneficial owner is an entity, as to each individual who is a director, executive officer, general partner or managing member of such entity or of any other entity that has or shares control of such entity (each such individual or entity, a "control person"):

(A) the number and class of Shares which are beneficially owned by such Stockholder or beneficial owner and by any control person as of the date of the notice, and a representation that the Stockholder will notify the Corporation in writing within five (5) business days after the record date for such meeting of the class and number of Shares beneficially owned by the Stockholder or such beneficial owners and by any control person as of the record date for the meeting. For purposes of this Subsection (A), Shares shall be treated as "beneficially owned" by a person if the person beneficially owns such Shares, directly or indirectly, for purposes of Section 13(d) of the Exchange Act and Regulations 13D and 13G thereunder or has or shares pursuant to any agreement, arrangement or understanding (whether or not in writing): (1) the right to acquire such Shares (whether such right is exercisable immediately or only after the passage of time or the fulfillment of

a condition or both), (2) the right to vote such Shares, alone or in concert with others, (3) investment power with respect to such Shares, including the power to dispose of, or to direct the disposition of, such Shares, and/or (4) a direct or indirect pecuniary interest in such Shares, as determined pursuant to Rule 16a-1(a)(2) under the Exchange Act, or other direct or indirect financial interest in Shares, regardless of whether exempt from the definition of pecuniary interest;

(B) whether and the extent to which any hedging, pledging or other transaction or series of transactions has been entered into as of the date of the notice by or on behalf of, or any other agreement, arrangement or understanding, including any derivative or short positions, profit interests, options, warrants, forward contracts, swaps, contracts of sale, voting rights, dividend rights, performance-related fees or any borrowing and/or lending of Shares (any of the foregoing, a "Derivative Instrument") has been made, whether the Derivative Instrument is to be settled with Shares or with cash based on the notional amount or value of Common Stock, the effect or intent of which is to mitigate loss to or manage risk or benefit of changes in the price of any class or series of capital stock of the Corporation, or to increase or decrease the voting power of, such Stockholder or any such beneficial owner and any control person with respect to any Shares, and a representation that the Stockholder will notify the Corporation in writing within five (5) business days after the record date for such meeting of any Derivative Instrument in effect as of the record date for the meeting;

(C) a representation whether the Stockholder or the beneficial owner, if any, and any control person intends or is part of a group that intends to engage in a solicitation with respect to the nomination or business proposed and, if so, (1) whether such solicitation will be conducted as an exempt solicitation under Rule 14a-2(b) of the Exchange Act, (2) the name of each participant (as defined in Item 4 of Schedule 14A under the Exchange Act) in such solicitation, (3) in the case of a proposal of business other than any nomination for the election of a director, whether such person intends or is part of a group which intends to deliver a proxy statement and form of proxy through means satisfying each of the conditions that would be applicable to the Corporation under either Rule 14a-16(a) or Rule 14a-16(n) of the Exchange Act to holders (including any beneficial owners pursuant to Rule 14b-1 and Rule 14b-2 of the Exchange Act) of at least the percentage of the voting power of the

outstanding Shares required under applicable law to approve or adopt the proposal, and (4) in the case of any solicitation that is subject to Rule 14a-19 of the Exchange Act, confirming that such person will deliver a proxy statement and form of proxy through means satisfying each of the conditions that would be applicable to the Corporation under either Rule 14a-16(a) or Rule 14a-16(n) of the Exchange Act to holders (including any beneficial owners pursuant to Rule 14b-1 and Rule 14b-2 of the Exchange Act) of at least sixty-seven percent (67%) of the voting power of the outstanding Shares then entitled to vote at the meeting on the election of directors;

(D) a representation that promptly after soliciting proxies from the percentage of Stockholders referred to in the representation required under clause (c)(iii)(C)(4) of this Section 12, and no later than the tenth day before such meeting of Stockholders, such Stockholder or beneficial owner will provide the Corporation with documents, which may take the form of a certified statement and documentation from a proxy solicitor, specifically demonstrating that the necessary steps have been taken to deliver a proxy statement and form of proxy to holders of such percentage of the Corporation's outstanding Shares, which documents shall be deemed to be a part of the notice required under this Section 12(c);

(E) a description of any plans or proposals which such Stockholder or beneficial owner and each control person may have which relate to or would result in, if implemented, any action that would (1) be required to be disclosed pursuant to Item 4 of Schedule 13D of the Exchange Act (regardless of whether a Schedule 13D is required), and/or (2) require the Stockholder to notify any government or regulatory agency, including the Board of Governors of the Federal Reserve System (the "Federal Reserve Board") and/or the Office of the Comptroller of the Currency (the "OCC") under applicable banking laws and regulations, and a representation that the Stockholder will notify the Corporation in writing within five (5) business days after the record date for such meeting of any such plans or proposals existing as of such record date; and

(F) a description (which description shall include, in addition to all other information, information identifying all parties thereto) of all agreements, arrangements or understandings with respect to the nomination or proposal among the Stockholder or the beneficial owner, if any, and any control person and each nominee, if any, and any other person or persons (naming such person or persons)

including without limitation any agreements that would be required to be disclosed pursuant to Item 5 or Item 6 of Exchange Act Schedule 13D (regardless of whether the requirement to file a Schedule 13D is applicable to the Stockholder or beneficial owner) pursuant to which the nomination or proposal is to be made by the Stockholder and a representation that the Stockholder will notify the Corporation in writing within five (5) business days after the record date for such meeting of any such agreements, arrangements or understandings in effect as of the record date for the meeting;

(iv) as to each person whom the Stockholder proposes to nominate for election as a director:

(A) all information regarding each nominee that would be required to be disclosed in solicitations of proxies for election of directors in an election contest pursuant to Regulation 14A under the Exchange Act and such person's written consent to being named as a nominee for director in a proxy statement and form of proxy relating to the meeting at which directors are to be elected and to serving as a director if elected;

(B) completed and signed questionnaires in the same form the Corporation requests of the Board of Directors' nominees for director, and such other information as the Corporation may reasonably request, including any additional information necessary for the Board of Directors to determine the eligibility of such proposed nominee to serve as a director of the Corporation, including information relevant to a determination of whether such person (1) qualifies as independent under the listing standards of each principal U.S. exchange upon which the Common Stock of the Corporation is listed, any applicable rules of the Securities and Exchange Commission, the Federal Reserve Board, the OCC and any publicly disclosed standards used by the Board of Directors in determining and disclosing the independence of the Corporation's directors, (2) has any direct or indirect relationship with the Corporation other than those relationships that have been deemed categorically immaterial pursuant to the Corporation's Corporate Governance Guidelines, and (3) if such person is not and has not been subject to any event specified in Item 401(f) of Regulation S-K (or successor rule) of the Securities and Exchange Commission;

(C) a written statement, not to exceed 500 words, in support of such person as a nominee for the Board of Directors; and

(D) a written representation by such person as a nominee that such person (1) is not and will not become a party to any compensatory, payment or other financial agreement, arrangement or understanding with any person or entity in connection with such person's nomination, service or action as a director of the Corporation, or any agreement, arrangement or understanding with any person or entity as to how such person would vote or act on any issue or question as a director, in each case that has not been disclosed to the Corporation, (2) is not and will not become a party to any agreement, arrangement or understanding with any person or entity that could limit or interfere with the person's ability to comply, if elected as a director, with such person's fiduciary duties under applicable law, and (3) has read and agrees, if elected to serve as a member of the Board of Directors, to adhere to the Corporation's Corporate Governance Guidelines and Code of Conduct and any other Corporation policies and guidelines applicable to directors.

(v) As to any business other than a nomination for director that the Stockholder proposes to bring before the meeting, to be proper, the notice by a Stockholder must set forth:

(A) a brief description of the business desired to be brought before the meeting;

(B) the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend the Bylaws of the Corporation, the language of the proposed amendment);

(C) the reasons for conducting such business at the meeting; and

(D) any substantial interest (within the meaning of Item 5 of Schedule 14A under the Exchange Act) in such business of such Stockholder and the beneficial owner, if any, on whose behalf the proposal is made and of any control person.

(d) Any Stockholder directly or indirectly soliciting proxies from other Stockholders must use a proxy card color other than white, which shall be reserved for the exclusive use for solicitation by the Board of Directors.

(e) Notwithstanding anything in the second sentence of Subsection (b) of this Section 12 to the contrary, in the event that the number of directors to be elected to the Board of Directors of the Corporation at an annual meeting is increased and there is no public announcement by the Corporation naming the nominees for the additional directorships at least one hundred twenty (120) days prior to the first anniversary of the preceding year's annual meeting, a Stockholder's notice required by this Section 12 shall also be considered timely, but only with respect to nominees for the additional directorships, if it shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the Corporation.

(f) Only such business shall be conducted at a special meeting of Stockholders as shall have been brought before the meeting pursuant to the Corporation's notice of meeting. Nominations of persons for election to the Board of Directors may be made at a special meeting of Stockholders at which directors are to be elected pursuant to the Corporation's notice of meeting (i) by or at the direction of the Board of Directors or any committee thereof or Stockholders pursuant to Article III, Section 2 of these Bylaws or (ii) provided that the Board of Directors or Stockholders pursuant to Article III, Section 2 of these Bylaws have determined that directors shall be elected at such meeting, by any Stockholder of the Corporation who is a stockholder of record at the time the notice provided for in this Section 12 is delivered to the Secretary, who is entitled to vote at the meeting and who complies with the notice procedures set forth in this Section 12. The number of persons a Stockholder may nominate for election as a director at the special meeting (or in the case of a Stockholder giving the notice on behalf of a beneficial owner, the number of persons a Stockholder may nominate for election as a director at the special meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such special meeting. In the event the Corporation calls a special meeting of Stockholders for the purpose of electing one or more directors to the Board of Directors, any such Stockholder entitled to vote in such election of directors may nominate a person or persons (as the case may be) for election to such position(s) as specified in the Corporation's notice of meeting, if the Stockholder's notice required by Subsection (b) of this Section 12 shall be delivered to the Secretary at the principal executive offices of the Corporation not earlier than the close of business on the one hundred twentieth (120th) day prior to such special meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such special meeting or the tenth (10th) day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors or the Stockholders pursuant to Article III, Section 2 of these Bylaws to be elected at such meeting. In no event shall the public announcement of an adjournment or postponement of a special meeting commence a new time period (or extend any time period) for the giving of a Stockholder's notice as described above.

(g) Except as otherwise provided by law, the chair of the meeting shall have the power and duty (i) to determine whether a nomination or any business proposed to be brought before the meeting was made or proposed, as the case may be, in accordance with the procedures set forth in this Section 12 (including whether the Stockholder or beneficial owner, if any, on whose

behalf the nomination or proposal is made provided timely and proper notice pursuant to this Section 12 or solicited (or is part of a group which solicited) or did not so solicit, as the case may be, proxies in support of such nominee or proposal in compliance with the representations as required by Subsection (c)(iii)(C) of this Section 12) and (ii) if any proposed nomination or business was not made or proposed in compliance with this Section 12 (including if a Stockholder or a nominee, as applicable, did not provide the information required under Article III, Section 12(c) to the Corporation within the time period prescribed therein), and if it be so determined, to declare that such nomination shall be disregarded or that such proposed business shall not be transacted, notwithstanding that proxies and votes in respect of such matter may have been received (which proxies and votes shall be disregarded). In furtherance and not by way of limitation of the foregoing provisions of this Section 12, unless otherwise required by law, if the Stockholder (or a qualified representative of the Stockholder) does not appear at the annual or special meeting of Stockholders of the Corporation to present a nomination or proposed business, such nomination shall be disregarded and such proposed business shall not be transacted, notwithstanding that proxies and votes in respect of such matter may have been received by the Corporation. For purposes of Article III, Section 2 and this Section 12, to be considered a qualified representative of the Stockholder, a person must be a duly authorized officer, manager or partner of such Stockholder or must be authorized by a writing executed by such Stockholder or an electronic transmission delivered by such Stockholder to act for such Stockholder as proxy at the meeting of Stockholders and such person must produce such writing or electronic transmission, or a reliable reproduction of the writing or electronic transmission, at the meeting of Stockholders. In the event that a qualified representative of the Stockholder will appear at the annual or special meeting of Stockholders (including a Stockholder Requested Special Meeting) to make a nomination or propose business, the Stockholder must provide notice of the designation, including the identity of the representative, to the Corporation at least forty-eight (48) hours prior to such meeting. Where a Stockholder fails to provide such notice of designation to the Corporation within the required timeframe, such Stockholder must appear in person to present such Stockholder's nomination or proposed business at the annual or special meeting or such nomination shall be disregarded and such proposed business shall not be transacted as provided for above.

(h) For purposes of this Section 12 and Article IV, Section 9(b) of these Bylaws, "public announcement" shall include disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(i) Notwithstanding the foregoing provisions of this Section 12, a Stockholder seeking to include a proposal in a proxy statement that has been prepared by the Corporation to solicit proxies shall comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this Section 12. Nothing in this Section 12 shall be deemed to affect any rights (i) of Stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 promulgated under the

Exchange Act or (ii) of the holders of any series of preferred stock to elect directors pursuant to any applicable provisions of the Certificate of Incorporation.

Section 13. Inspectors of Election. The Corporation shall, in advance of any meeting of Stockholders, appoint one or more inspectors of election, who may be employees of the Corporation, to act at the meeting or any adjournment thereof and to make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. In the event that no inspector so appointed or designated is able to act at a meeting of Stockholders, the chair of the meeting shall appoint one or more inspectors to act at the meeting. The inspector or inspectors so appointed or designated shall (a) ascertain the number of Shares outstanding and the voting power of each such Share, (b) determine the Shares of the Corporation represented at the meeting and the validity of proxies and ballots, (c) count all votes and ballots, (d) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors, and (e) certify their determination of the number of Shares of the Corporation represented at the meeting and such inspectors' count of all votes and ballots. Such certification and report shall specify such other information as may be required by law. In determining the validity and counting of proxies and ballots cast at any meeting of Stockholders of the Corporation, the inspectors may consider such information as is permitted by applicable law. No person who is a nominee for an office at an election may serve as an inspector at such election.

ARTICLE IV
BOARD OF DIRECTORS

Section 1. General Powers. The business and affairs of the Corporation shall be managed under the direction of its Board of Directors, except as otherwise provided in the Certificate of Incorporation or permitted under the DGCL.

Section 2. Number and Qualifications. Subject to the Certificate of Incorporation, the number of directors of the Corporation shall be fixed or changed from time to time by resolution adopted by the Board of Directors. Directors need not be residents of the State of Delaware or Stockholders of the Corporation. A director of the Corporation shall at all times meet all statutory and regulatory qualifications for a director of a publicly held bank holding company and financial holding company, as well as all requirements of the Corporation's primary regulators in their supervisory capacity.

Section 3. Terms of Directors. The terms of all directors shall expire at the next annual Stockholders meeting following their election or upon a director's earlier death, resignation, disqualification or removal. A decrease in the number of directors does not shorten an incumbent director's term. The term of a director elected to fill a vacancy shall expire at the next Stockholders meeting at which directors are elected or upon such director's earlier death, resignation, disqualification or removal. Despite the expiration of a director's term, however, such director shall continue to serve until the director's successor is elected and qualified or until

such director's earlier death, resignation, disqualification or removal. Any director may be removed at any time with or without cause by the affirmative vote of the holders of a majority of the voting power of the outstanding Shares then entitled to vote at an election of directors. Any director may resign at any time upon notice to the Corporation.

Section 4. Vacancies and Newly Created Directorships. Except in those instances where the Certificate of Incorporation or applicable law provides otherwise, a majority of directors then in office, although less than a quorum, or a sole remaining director, may fill a vacancy or a newly created directorship on the Board of Directors. A vacancy that will occur at a specific later date (by reason of a resignation effective at a later date or otherwise) may be filled before the vacancy occurs by a majority of directors then in office, including those who have so resigned, but the new director may not take office until the vacancy occurs.

Section 5. Compensation. The Board of Directors may provide for the compensation of directors for their services as such and may provide for the payment or reimbursement of any or all expenses reasonably incurred by them in attending meetings of the Board or of any committee of the Board or in the performance of their other duties as directors.

Section 6. Committees. The Board of Directors may from time to time create or eliminate one or more committees, including but not limited to Audit, Compensation and Human Capital, Corporate Governance, ESG, and Sustainability, and Enterprise Risk committees, and appoint members of the Board of Directors to serve on them. Each committee must have one or more members who serve at the pleasure of the Board of Directors, and the Board of Directors shall periodically review, and approve any changes to, the charter describing the duties of each committee. The provisions of the DGCL and these Bylaws that govern meetings, action without meetings, notice and waiver of notice, and quorum and voting requirements of the Board of Directors, shall apply to committees and their members as well. Each committee may exercise the authority of the Board of Directors to the extent provided by the Board of Directors, and to the fullest extent permitted by the DGCL and other applicable law. Nothing contained in this Section 6 shall preclude the Board of Directors from establishing and appointing any committee, whether of directors or otherwise, not having or exercising the authority of the Board of Directors.

Section 7. Chair of the Board. The Board of Directors may elect from among its members a director designated as the Chair of the Board, but the appointment of a Chair of the Board shall not be required. If a Chair of the Board shall be elected, then the Chair of the Board shall have such other duties and authority as may be prescribed by the Board of Directors from time to time. In general, the Chair of the Board shall perform all duties incident to the position of chair of the board or as may be prescribed by the Board of Directors or these Bylaws from time to time. The Board of Directors, by the affirmative vote of a majority of its members, may remove the Chair of the Board.

Section 8. Lead Independent Director. A majority of the independent members of the Board of Directors may elect from among the independent members of the Board of Directors a Lead Independent Director, but the election of a Lead Independent Director shall not be required. The

Lead Independent Director may be removed as a Lead Independent Director by vote of a majority of the independent members of the Board of Directors. If a Lead Independent Director shall be elected, then the Lead Independent Director shall have such duties and authority as may be prescribed by the Board of Directors from time to time. For purposes of this Bylaw, "independent" has the meaning set forth in the NYSE listing standards, unless the Corporation's Common Stock ceases to be listed on the NYSE and is listed on another exchange, in which case such exchange's definition of independent director shall apply.

Section 9. Inclusion of Director Nominations by Stockholders in the Corporation's Proxy Materials.

(a) Subject to the terms and conditions set forth in these Bylaws, the Corporation shall include in its proxy statement and form of proxy (hereinafter, the "proxy materials") for an annual meeting of Stockholders, in addition to the persons nominated for election by the Board of Directors or any committee thereof, the name, and with respect to the proxy statement, the Required Information (defined below), of any person nominated for election (the "Stockholder Nominee") to the Board of Directors by one or more Stockholders that satisfies the notice, ownership and other requirements of this Section 9 (such person or group, the "Eligible Stockholder").

(b) To nominate a Stockholder Nominee, the Eligible Stockholder must provide a notice that expressly elects to have its Stockholder Nominee included in the Corporation's proxy materials pursuant to this Section 9 (the "Notice of Proxy Access Nomination"). To be timely, a Notice of Proxy Access Nomination must be delivered to the Secretary at the principal executive offices of the Corporation by registered mail, return receipt requested, not earlier than the one hundred fiftieth (150th) calendar day and no later than the close of business on the one hundred twentieth (120th) calendar day prior to the anniversary of the date the Corporation commenced mailing of its proxy materials in connection with the most recent annual meeting of Stockholders (the last day on which a Notice of Proxy Access Nomination may be delivered, the "Final Proxy Access Nomination Date"), provided that in the event that the date of such annual meeting is more than thirty (30) calendar days before or seventy (70) calendar days after its anniversary date, the Notice of Proxy Access Nomination must be so delivered not later than the close of business on the later of (i) the one hundred twentieth (120th) calendar day prior to such annual meeting or (ii) the tenth (10th) calendar day following the day on which a public announcement of the annual meeting date is first made. In addition to other requirements set forth in this Section 9, the Notice of Proxy Access Nomination must include the name and address of the Eligible Stockholder (including each Stockholder and/or beneficial owner whose stock ownership is counted for the purposes of qualifying as an Eligible Stockholder).

(c) For purposes of this Section 9, the "Required Information" that the Corporation will include in its proxy statement is (i) the information concerning the Stockholder Nominee and the Eligible Stockholder that the Corporation determines is required to be disclosed in the Corporation's proxy materials by the regulations promulgated under the Exchange Act; and (ii) if the Eligible Stockholder so elects, a Statement (defined below). Nothing in this Section 9 shall

limit the Corporation's ability to solicit against and include in its proxy materials its own statements relating to any Stockholder Nominee.

(d) The maximum number of Stockholder Nominees (including Stockholder Nominees that were submitted by an Eligible Stockholder for inclusion in the Corporation's proxy materials pursuant to this Section 9 but either are subsequently withdrawn or that the Board of Directors decides to nominate as Board of Director nominees) appearing in the Corporation's proxy materials with respect to an annual meeting of Stockholders shall not exceed 20% of the number of directors in office as of the Final Proxy Access Nomination Date, or if such number is not a whole number, the closest whole number below 20% (the "Permitted Number"); provided, however, that the Permitted Number shall be reduced, but not below zero, by the number of such director candidates for which the Corporation shall have received one or more valid notices that a Stockholder (other than an Eligible Stockholder) intends to nominate director candidates at such applicable annual meeting of Stockholders pursuant to Article III, Section 12 of these Bylaws; provided, further, that in the event that one or more vacancies for any reason occurs on the Board of Directors at any time after the Final Proxy Access Nomination Date and before the date of the applicable annual meeting of Stockholders and the Board of Directors resolves to reduce the size of the Board of Directors in connection therewith, the Permitted Number shall be calculated based on the number of directors in office as so reduced. In the event that the number of Stockholder Nominees submitted by Eligible Stockholders pursuant to this Section 9 exceeds the Permitted Number, each Eligible Stockholder will select one Stockholder Nominee for inclusion in the Corporation's proxy materials until the Permitted Number is reached, with preference provided based on the number (largest to smallest) of Shares owned by each Eligible Stockholder pursuant to this Section 9. If the Permitted Number is not reached after each Eligible Stockholder has selected one Stockholder Nominee, this selection process will continue as many times as necessary, following the same order each time, until the Permitted Number is reached.

(e) An Eligible Stockholder is one or more Stockholders who owns and has owned, or are acting on behalf of one or more beneficial owners who own and have owned (as defined below), for at least three years as of date the Notice of Proxy Access Nomination is received by the Corporation, Shares representing at least 3% of the voting power entitled to vote generally in the election of directors (the "Required Shares"), and who continue to own the Required Shares at all times between the date the Notice of Proxy Access Nomination is received by the Corporation and the date of the applicable annual meeting of Stockholders, provided that the aggregate number of Stockholders, and, if and to the extent that a Stockholder is acting on behalf of one or more beneficial owners, of such beneficial owners, whose stock ownership is counted for the purposes of satisfying the foregoing ownership requirement shall not exceed twenty (20). Two or more funds that are (i) under common management and investment control or (ii) under common management and funded primarily by a single employer (such funds together under each of (i) or (ii) comprising a "Qualifying Fund") shall be treated as one Stockholder for the purpose of determining the aggregate number of Stockholders in this Section 9(e), and treated as one person for the purpose of determining ownership in Section 9(f), provided that each fund comprising a Qualifying Fund otherwise meets the requirements set forth in this Section 9. No

Stockholder or beneficial holder may be a member of more than one group constituting an Eligible Stockholder under this Section 9.

(f) For purposes of calculating the Required Shares, "ownership" shall be deemed to consist of and include only the outstanding Shares as to which a person possesses both (i) the full voting and investment rights pertaining to the Shares and (ii) the full economic interest in (including the opportunity for profit and risk of loss on) such Shares; provided that the ownership of Shares calculated in accordance with clauses (i) and (ii) shall not include any Shares (A) that a person has sold in any transaction that has not been settled or closed, (B) that a person has borrowed or purchased pursuant to an agreement to resell or (C) subject to any option, warrant, forward contract, swap, contract of sale, other derivative or similar agreement entered into by a person, whether any such instrument or agreement is to be settled with Shares or with cash based on the notional amount or value of Shares, in any such case which instrument or agreement has, or is intended to have, the purpose or effect of (1) reducing in any manner, to any extent or at any time in the future, the person's full right to vote or direct the voting of any such Shares, and/or (2) hedging, offsetting or altering to any degree gain or loss arising from the full economic ownership of such person's Shares. "Ownership" shall include Shares held in the name of a nominee or other intermediary so long as the person claiming ownership of such Shares retains the right to instruct how the Shares are voted with respect to the election of directors and possesses the full economic interest in the Shares, provided that this provision shall not alter the obligations of any Stockholder to provide the Notice of Proxy Access Nomination. Ownership of Shares shall be deemed to continue during any period in which Shares have been loaned if the person claiming ownership may terminate the Shares lending within three (3) days and during any period in which any voting power has been delegated by means of a proxy, power of attorney or other instrument or arrangement which is revocable at any time without condition. The determination of the extent of "ownership" of Shares for purposes of this Section 9 shall be made in good faith by the Board of Directors, which determination shall be conclusive and binding on the Corporation and the Stockholders. The terms "owned," "owning" and other variations of the word "own" shall have correlative meanings. An Eligible Stockholder shall include in its Notice of Proxy Access Nomination the number of Shares it is deemed to own for the purposes of this Section 9.

(g) No later than the Final Proxy Access Nomination Date, an Eligible Stockholder (including each Stockholder, fund comprising a Qualifying Fund and/or beneficial owner whose stock ownership is counted for the purposes of qualifying as an Eligible Stockholder) must provide the following information in writing to the Secretary: (i) one or more written statements from the record holder of the Shares (and from each intermediary through which the Shares are or have been held during the requisite three-year holding period) verifying that, as of the date the Notice of Proxy Access Nomination is sent to by the Corporation, the Eligible Stockholder owns, and has owned continuously for the preceding three (3) years, the Required Shares, and the Eligible Stockholder's agreement to provide (A) within five (5) business days after the record date for the annual meeting, written statements from the record holder and intermediaries verifying the Eligible Stockholder's continuous ownership of the Required Shares through the record date, and (B) immediate notice if the Eligible Stockholder ceases to own any of the Required Shares

prior to the date of the applicable annual meeting of Stockholders; (ii) the written consent of each Stockholder Nominee to being named as a nominee for director in a proxy statement and form of proxy and to serving as a director if elected; and (iii) a copy of the Schedule 14N that has been filed with the Securities and Exchange Commission as required by Rule 14a-18 under the Exchange Act. In addition, no later than the Final Proxy Access Nomination Date, an Eligible Stockholder (including each Stockholder, fund comprising a Qualifying Fund and/or beneficial owner whose stock ownership is counted for purposes of qualifying as an Eligible Stockholder) must provide to the Secretary a signed and written agreement of the Eligible Stockholder setting forth: (i) a representation that the Eligible Stockholder (A) acquired the Required Shares in the ordinary course of business and not with the intent to change or influence control of the Corporation, and does not presently have such intent, (B) intends to maintain qualifying ownership of the Required Shares through the date of the applicable annual meeting of Stockholders, (C) has not nominated and will not nominate for election to the Board of Directors at the applicable annual meeting of Stockholders any person other than its Stockholder Nominee, (D) has not engaged and will not engage in, and has not and will not be a "participant" in another person's, "solicitation" within the meaning of Rule 14a-1(l) under the Exchange Act in support of the election of any individual as a director at the applicable annual meeting of Stockholders other than its Stockholder Nominee(s) or a nominee of the Board of Directors, (E) will not distribute to any Stockholder any form of proxy for the applicable annual meeting of Stockholders other than the form distributed by the Corporation, and (F) will provide facts, statements and other information in all communications with the Corporation and its Stockholders that are or will be true and correct in all material respects and do not and will not omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading and otherwise will comply with all applicable laws, rules and regulations in connection with any actions taken pursuant to this Section 9; (ii) a representation that the Eligible Stockholder intends to maintain ownership (as defined in this Section 9) of the Required Shares for at least one year following the applicable annual meeting of Stockholders; (iii) in the case of a nomination by a group of Stockholders that together is such an Eligible Stockholder, the designation by all group members of one group member that is authorized to act on behalf of all members of the nominating stockholder group with respect to the nomination and matters related thereto, including withdrawal of the nomination; and (iv) an undertaking that the Eligible Stockholder agrees to (A) assume all liability stemming from any legal or regulatory violation arising out of the Eligible Stockholder's communications with the Stockholders of the Corporation or out of the information that the Eligible Stockholder provided to the Corporation, (B) indemnify and hold harmless the Corporation and each of its directors, officers and employees individually against any liability, loss or damages in connection with any threatened or pending action, suit or proceeding, whether legal, administrative or investigative, against the Corporation or any of its directors, officers or employees arising out of any nomination, solicitation or other activity by the Eligible Stockholder in connection with its efforts to elect the Stockholder Nominee pursuant to this Section 9, and (C) file with the Securities and Exchange Commission any solicitation or other communication with the Corporation's Stockholders relating to the meeting at which the Stockholder Nominee will be nominated, regardless of whether any such filing is required under Regulation 14A of the Exchange Act or whether any exemption from filing is available for such solicitation or other communication

under Regulation 14A of the Exchange Act. In addition, no later than the Final Proxy Access Nomination Date, a Qualifying Fund whose stock ownership is counted for purposes of qualifying as an Eligible Stockholder must provide to the Secretary documentation reasonably satisfactory to the Board of Directors that demonstrates that the funds comprising the Qualifying Fund are either (i) under common management and investment control, or (ii) under common management and funded primarily by a single employer.

(h) The Eligible Stockholder may provide to the Secretary, at the time the information required by this Section 9 is provided, a written statement for inclusion in the Corporation's proxy materials for the applicable annual meeting of Stockholders, not to exceed 500 words, in support of the Eligible Stockholder's Stockholder Nominee (the "Statement"). Notwithstanding anything to the contrary contained in this Section 9, the Corporation may omit from its proxy materials any information or Statement (or portion thereof) that it, in good faith, believes would violate any applicable law or regulation.

(i) The Notice of Proxy Access Nomination shall set forth or be submitted with the following information and materials in writing: (i) an executed agreement, in a form deemed satisfactory by the Board of Directors or its designee, that (A) the Stockholder Nominee has read and agrees, if elected, to serve as a member of the Board of Directors, to adhere to the Corporation's Corporate Governance Guidelines and Code of Conduct and any other Corporation policies and guidelines applicable to directors, and (B) that the Stockholder Nominee is not and will not become a party to any compensatory, payment or other financial agreement, arrangement or understanding with any person or entity in connection with such Stockholder Nominee's nomination, service or action as a director of the Corporation, or any agreement, arrangement or understanding with any person or entity as to how the Stockholder Nominee would vote or act on any issue or question as a director, in each case that has not been disclosed to the Corporation; (ii) all completed and signed questionnaires requested of the Corporation's Board of Directors; and (iii) a representation that the Stockholder Nominee will provide, within five (5) business days of the Corporation's request, such additional information as the Corporation determines may be necessary to permit the Board of Directors to determine (A) if such Stockholder Nominee is independent under the listing standards of each principal U.S. exchange upon which the Common Stock of the Corporation is listed, any applicable rules of the Securities and Exchange Commission, the Federal Reserve Board, the OCC and any publicly disclosed standards used by the Board of Directors in determining and disclosing the independence of the Corporation's directors, (B) if such Stockholder Nominee has any direct or indirect relationship with the Corporation other than those relationships that have been deemed categorically immaterial pursuant to the Corporation's Corporate Governance Guidelines, and (C) if such Stockholder Nominee is not and has not been subject to any event specified in Item 401(f) of Regulation S-K (or successor rule) of the Securities and Exchange Commission. In the event that any information or communications provided by the Eligible Stockholder or the Stockholder Nominee to the Corporation or its Stockholders is inaccurate, incomplete, ceases to be true and correct in any respect or omits a fact necessary to make the statements made, in light of the circumstances under which they were made, not misleading, each Eligible Stockholder or Stockholder Nominee, as the case may be, shall promptly notify the Secretary of any such

inaccuracy or omission in such previously provided information and of the information that is required to make such information or communication true and correct; it being understood that providing any such notification shall not be deemed to cure any defect or limit the Corporation's rights to omit a Stockholder Nominee from its proxy materials as provided in this Section 9.

(j) Any Stockholder Nominee who is included in the Corporation's proxy materials for a particular annual meeting of Stockholders but either (i) withdraws from or becomes ineligible or unavailable for election at that annual meeting, or (ii) does not receive at least 20% of the votes cast in favor of the Stockholder Nominee's election, will be ineligible to be a Stockholder Nominee pursuant to this Section 9 for the next two (2) annual meetings of Stockholders. Any Stockholder Nominee who is included in the Corporation's proxy materials for a particular annual meeting of Stockholders, but subsequently is determined not to satisfy the eligibility requirements of this Section 9 or any other provision of the Corporation's Bylaws, Certificate of Incorporation, Corporate Governance Guidelines or other applicable regulation at any time before the applicable annual meeting of Stockholders, will not be eligible for election at the relevant annual meeting of Stockholders and may not be substituted by the Eligible Stockholder that nominated such Stockholder Nominee. Any Eligible Stockholder (including each Stockholder, fund comprising a Qualifying Fund and/or beneficial owner whose stock ownership is counted for the purposes of qualifying as an Eligible Stockholder) whose Stockholder Nominee is elected as a director at the annual meeting of Stockholders will not be eligible to nominate or participate in the nomination of a Stockholder Nominee for the following two (2) annual meetings of Stockholders other than the nomination of such previously elected Stockholder Nominee.

(k) The Corporation shall not be required to include, pursuant to this Section 9, a Stockholder Nominee in its proxy materials for any meeting of Stockholders, or, if the proxy statement already has been filed, to allow the nomination of a Stockholder Nominee, notwithstanding that proxies in respect of such vote may have been received by the Corporation: (i) if the Stockholder Nominee or the Eligible Stockholder (or any member of any group of Stockholders that together is such Eligible Stockholder) who has nominated such Stockholder Nominee has engaged in or is currently engaged in, or has been or is a "participant" in another person's, "solicitation" within the meaning of Rule 14a-1(l) under the Exchange Act in support of the election of any individual as a director at the applicable annual meeting of Stockholders other than its Stockholder Nominee(s) or a nominee of the Board of Directors; (ii) if another person is engaging in a "solicitation" within the meaning of Rule 14a-1(l) under the Exchange Act in support of the election of any individual as a director at the applicable annual meeting of Stockholders other than a nominee of the Board of Directors; (iii) who is not independent under the listing standards of each principal U.S. exchange upon which the Common Stock of the Corporation is listed, any applicable rules of the Securities and Exchange Commission, the Federal Reserve Board, the OCC, and any publicly disclosed standards used by the Board of Directors in determining and disclosing independence of the Corporation's directors, in each case as determined by the Board of Directors; (iv) who does not meet the audit committee independence requirements under the rules of any stock exchange on which the Corporation's securities are traded, is not a "non-employee director" for the purposes of Rule 16b-3 under the Exchange Act (or any successor rule), is not experienced in matters of risk management for the purposes of

Regulation YY of the Federal Reserve Board, is not independent for the purposes of the requirements under the FDIC Improvement Act related to designation as an "outside director," and is not a U.S. citizen; (v) whose election as a member of the Board of Directors would cause the Corporation to be in violation of these Bylaws, the Certificate of Incorporation, the rules and listing standards of the principal U.S. securities exchanges upon which the Common Stock of the Corporation is listed, or any applicable state or federal law, rule or regulation; (vi) who is or has been, within the past three (3) years, an officer or director of a competitor, for purposes of Section 8 of the Clayton Antitrust Act of 1914; (vii) whose election as a member of the Board of Directors would cause the Corporation to seek, or assist in the seeking of, advance approval or to obtain, or assist in the obtaining of, an interlock waiver pursuant to the rules or regulations of the Federal Reserve Board, the OCC or the Federal Energy Regulatory Commission; (viii) whose then-current or within the preceding ten (10) years' business or personal interests place such Stockholder Nominee in a conflict of interest with the Corporation or any of its subsidiaries that would cause such Stockholder Nominee to violate any fiduciary duties of directors under applicable law, including but not limited to, the duty of loyalty and duty of care, as determined by the Board of Directors; (ix) who is a named subject of a pending criminal proceeding (excluding traffic violations and other minor offenses) or has been convicted in such a criminal proceeding within the past ten (10) years; (x) if such Stockholder Nominee or the applicable Eligible Stockholder (or any member of any group of Stockholders that together is such Eligible Stockholder) shall have provided information to the Corporation in connection with such nomination that was untrue in any material respect or omitted to state a material fact necessary in order to make any statement made, in light of the circumstances under which it was made, not misleading, as determined by the Board of Directors or any committee thereof; (xi) the Eligible Stockholder (or any member of any group of Stockholders that together is such Eligible Stockholder) does not appear at the applicable annual meeting of Stockholders to present the Stockholder Nominee for election; (xii) the Eligible Stockholder (or any member of any group of Stockholders that together is such Eligible Stockholder) or applicable Stockholder Nominee otherwise breaches or fails to comply with its representations or obligations pursuant to these Bylaws, including, without limitation, this Section 9; or (xiii) the Eligible Stockholder ceases to be an Eligible Stockholder for any reason, including but not limited to not owning the Required Shares through the date of the applicable annual meeting. For the purpose of this paragraph, clauses (iii) through (xiii) will result in the exclusion from the proxy materials pursuant to this Section 9 of the specific Stockholder Nominee to whom the ineligibility applies, or, if the proxy statement already has been filed, the ineligibility of the Stockholder Nominee; however, clauses (i) and (ii) will result in the exclusion from the proxy materials pursuant to this Section 9 of all Stockholder Nominees from the applicable annual meeting of Stockholders, or, if the proxy statement already has been filed, the ineligibility of all Stockholder Nominees. Any Stockholder Nominee who is included in the Corporation's proxy materials for an annual meeting of Stockholders pursuant to this Section 9 shall tender an irrevocable resignation in advance of the annual meeting, provided that such resignation shall expire upon the certification of the voting results of that annual meeting of Stockholders. Such resignation shall become effective upon a determination by the Board of Directors or any committee thereof that (i) the information provided pursuant to this Section 9 to the Corporation by such individual or by the Eligible Stockholder (or any member of any group of Stockholders that together is such Eligible

Stockholder) who nominated such individual was untrue in any material respect or omitted to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading or (ii) such individual, or the Eligible Stockholder (or any member of any group of Stockholders that together is such Eligible Stockholder) who nominated such individual, shall have breached or failed to comply with its agreements, representations undertakings and/or obligations pursuant to these Bylaws, including, without limitation, this Section 9.

ARTICLE V
MEETINGS OF DIRECTORS

Section 1. Regular Meetings. A regular meeting of the Board of Directors shall be held without other notice than this Bylaw provision immediately after, and at the same place as, the annual meeting of the Stockholders. In addition, the Board of Directors may determine the date, time and place, within or without the State of Delaware for the holding of additional regular meetings.

Section 2. Special Meetings. Special meetings of the Board of Directors may be held at any date, time and place, within or without the State of Delaware, upon the call of the Chair of the Board, the Lead Independent Director, the Chief Executive Officer, the President or of the Secretary acting under instructions from the Chair of the Board, the Lead Independent Director, the Chief Executive Officer or the President, or upon the call of any three directors. Special meetings may be held at any date, time and place and without special notice by unanimous consent of the directors.

Section 3. Notice. The person or persons calling a special meeting of the Board of Directors shall, at least twenty-four (24) hours before the meeting, give notice thereof by any usual means of communication. Such notice may be communicated, without limitation, in person; by telephone, facsimile, or other electronic transmission; or by mail or private carrier. Notice of a directors' meeting is effective at the earliest of the following:

(a) when received;

(b) if by facsimile or other electronic transmission, when sent addressed to the director; or

(c) on the date shown on the confirmation of delivery issued by United States mail or a private carrier, if sent by overnight delivery to the address of the director last known to the Corporation.

Oral notice is effective when actually communicated to the director. Notice of an adjourned meeting of directors need not be given if the time and place are fixed at the meeting being adjourned. The notice of any meeting of directors need not describe the purpose of the meeting unless otherwise required by the DGCL.

Section 4. Waiver of Notice. A director may waive any notice required by the DGCL, the Certificate of Incorporation or these Bylaws before or after the date and time stated in the notice. The waiver may be in writing, signed by the director entitled to the notice, or by electronic transmission of such director and filed with the minutes or corporate records, except that, notwithstanding the foregoing requirement of notice, a director's attendance at or participation in a meeting waives any required notice to the director of the meeting unless the director at the beginning of the meeting expressly objects to holding the meeting or transacting business at the meeting because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the directors or members of a committee of directors need be specified in any waiver of notice unless so required by the Certificate of Incorporation.

Section 5. Quorum. A majority of the number of directors in office immediately before the meeting begins, but in no case less than one-third (1/3) of the total number of directors fixed by the Board of Directors, shall constitute a quorum for the transaction of business at any meeting of the Board of Directors, but if a quorum is not present at a meeting, a majority of directors present may adjourn the meeting from time to time without further notice.

Section 6. Manner of Acting. Except as otherwise provided in the DGCL, the Certificate of Incorporation or herein, the act of the majority of the directors present at a meeting at which a quorum is present shall be the act of the Board of Directors.

Section 7. Conduct of Meetings. The Chair of the Board shall preside at all meetings of the Board of Directors or, in the Chair of the Board's absence or at the Chair of the Board's request, the Lead Independent Director shall so preside; provided, however, that in the absence or at the request of both the Chair of the Board and the Lead Independent Director, or if there shall not be persons holding such offices, the person selected to preside at a meeting of directors by a vote of a majority of the directors present shall preside at such meeting. The Secretary, or in the absence or at the request of the Secretary, any person designated by the person presiding at a meeting of the Board of Directors, shall act as secretary of such meeting.

Section 8. Action Without a Meeting. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting if the action is taken by all members of the Board of Directors or such committee, as the case may be. The action must be evidenced by one or more consents in writing or by electronic transmission describing the action taken. After an action is taken, the consent or consents shall be filed with the records of the Board of Directors or of such committee in the same paper or electronic form as the minutes are maintained.

Section 9. Participation Other Than in Person. Members of the Board of Directors or any committee designated by the Board of Directors may participate in a Board of Directors or committee meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting pursuant to this Section 9 shall constitute presence in person at the meeting.

ARTICLE VI
OFFICERS

Section 1. Officers of the Corporation. The officers of the Corporation may include a Chief Executive Officer, a President, one or more Vice Chairs, one or more individuals designated by the Board of Directors as an "executive officer" for purposes of the Securities and Exchange Commission's rules and regulations (the "Executive Officers"), one or more Managing Directors (including the officer title of Directors), one or more Vice Presidents (including Executive Vice Presidents, Senior Vice Presidents and Assistant Vice Presidents), a Secretary, a Treasurer, a chief internal audit executive (the "Chief Audit Executive"), and such other officers, assistant or deputy officers and agents, as may be elected from time to time by or under the authority of the Board of Directors (collectively, with the Chief Executive Officer, the President, the Vice Chair, the Executive Officers, the Managing Directors, the Vice Presidents, the Secretary, the Treasurer, and the Chief Audit Executive, the "Officers"). The Officers shall have such duties and authorities as may be prescribed by these Bylaws, the Board of Directors, the Chief Executive Officer or by the Officer to whom such Officer reports.

The same individual may simultaneously hold more than one office in the Corporation, but no individual may act in more than one capacity where action of two or more Officers is required. The title of any Officer may include any additional designation descriptive of such Officer's duties as the Board of Directors may prescribe.

Section 2. Appointment and Term. The Officers of the Corporation shall be elected by the Board of Directors, by a duly authorized committee thereof or by an Officer authorized by the Board of Directors or a duly authorized committee thereof to elect one or more Officers; provided, however, that no Officer may be authorized to elect the Chief Executive Officer or the President. Each Officer shall hold office until such Officer's death, resignation, retirement, removal or disqualification or until such Officer's successor is elected and qualified.

Section 3. Compensation. The compensation of all Officers of the Corporation shall be fixed by or under the authority of the Board of Directors. No Officer shall be prevented from receiving such salary by reason of the fact that such Officer is also a director.

Section 4. Resignation and Removal of Officers. An Officer may resign at any time by communicating such Officer's resignation to the Corporation. A resignation is effective when it is communicated unless it specifies in writing or by electronic transmission a later effective date. If a resignation is made effective at a later date and the Corporation accepts the future effective date, the Board of Directors may fill the pending vacancy before the effective date if the Board of Directors provides that the successor does not take office until the effective date. The Board of Directors, by the affirmative vote of a majority of its members, may remove the Chief Executive Officer or the President whenever in its judgment the best interest of the Corporation would be served thereby. In addition, the Board of Directors or a duly authorized committee or an Officer

authorized by the Board of Directors or a duly authorized committee thereof may remove any other Officer at any time with or without cause.

Section 5. Contract Rights of Officers. The appointment of an Officer does not itself create contract rights. An Officer's removal does not itself affect the Officer's contract rights, if any, with the Corporation, and an Officer's resignation does not itself affect the Corporation's contract rights, if any, with the Officer.

Section 6. Chief Executive Officer. The Board of Directors may elect a Chief Executive Officer. The Chief Executive Officer shall, subject to the direction and control of the Board of Directors, supervise and control the business and affairs of the Corporation. In general the Chief Executive Officer shall perform all duties incident to the position of chief executive officer or as may be prescribed by the Board of Directors or these Bylaws from time to time.

Section 7. President. The Board of Directors may elect a President. The President shall perform the duties and exercise the powers of that office and, in addition, the President shall perform such other duties and shall have such other authority as the Board of Directors shall prescribe. In general the President shall perform all duties incident to the position of president or as may be prescribed by the Board of Directors or these Bylaws from time to time. The Board of Directors shall, if it deems such action necessary or desirable, designate the Officer of the Corporation who is to perform the duties of the President in the event of such Officer's absence or inability to act.

Section 8. Secretary. The Secretary shall keep the minutes of meetings of the Stockholders and of the Board of Directors and be custodian of the corporate records, and in general perform all duties incident to the office of the secretary and such other duties as from time to time may be prescribed by these Bylaws or assigned to the Secretary by the Chief Executive Officer, the Board of Directors or a committee created by the Board of Directors.

Section 9. Treasurer. The Treasurer shall have charge and custody of all funds and securities of the Corporation, and in general perform all of the duties incident to the office of Treasurer and such other duties as from time to time may be prescribed by these Bylaws, or assigned to the Treasurer by the Chief Executive Officer, the Board of Directors or a committee created by the Board of Directors.

ARTICLE VII
SHARES AND THEIR TRANSFER

Section 1. Shares. Shares of the Corporation will be uncertificated unless the Board of Directors by resolution determines otherwise. Shares represented by an existing certificate will remain certificated until such certificate is surrendered to the Corporation. Shares represented by certificates shall be in such form as shall be required by the DGCL, and as determined by the Board of Directors. If certificates are issued, each certificate shall be signed by, or in the name of the Corporation by, any two authorized Officers, including but not limited to the Chief

Executive Officer, a Vice Chair of the Board, the President, a Vice President, the Secretary or the Treasurer of the Corporation certifying the number of Shares represented by such certificate. Any or all the signatures on the certificate may be a facsimile. In case any Officer or any transfer agent or registrar (whose roles are described in Article VII, Section 4 below) who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such Officer, transfer agent, or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if such person were such Officer, transfer agent, or registrar at the date of issue.

Section 2. Stock Transfer Books and Transfer of Shares. The Corporation, or its agent, shall keep a book or set of books to be known as the stock transfer books of the Corporation, containing the name of each stockholder of record, together with such Stockholder's address and the number and class or series of Shares held by such Stockholder. Transfer of Shares of the Corporation shall be made on the stock transfer books of the Corporation, and if such Shares are represented by certificates only upon surrender of the certificates for the Shares sought to be transferred by the holder of record thereof or by such holder's duly authorized agent, transferee or legal representative, who shall furnish proper evidence of authority to transfer with the Secretary. All certificates surrendered for transfer shall be canceled, and the Shares shall thereafter be uncertificated, unless otherwise determined by a resolution of the Board of Directors.

Section 3. Lost Certificates. The Chief Executive Officer, the President, any Vice Chair, any Executive Officer, any Senior Vice President, any Managing Director, the Secretary, the Treasurer, or such other Officers, employees or agents as the Board of Directors or any of the designated Officers may direct, may authorize the issuance of uncertificated Shares, or, if determined by a resolution of the Board of Directors, a replacement stock certificate, in place of a certificate claimed to have been lost, stolen, destroyed or mutilated, upon receipt of an affidavit of such fact from the person or persons claiming the loss or destruction and any other documentation satisfactory to the Board of Directors or such Officer. At the discretion of the party reviewing such claim, any such claimant may be required to give the Corporation a bond in such sum as it may direct to indemnify against the loss from any claim with respect to the certificate claimed to have been lost, stolen or destroyed.

Section 4. Transfer Agent and Registrar; Regulations. The Corporation may, if and whenever the Board of Directors so determines, maintain in the State of Delaware or any other state of the United States, one or more transfer offices or agencies and also one or more registry offices, which offices and agencies may establish rules and regulations for the issue, transfer and registration of certificates and uncertificated Shares not inconsistent with these Bylaws or applicable law. No certificates for Shares in respect of which a Transfer Agent and Registrar shall have been designated shall be valid unless countersigned by such Transfer Agent and registered by such Registrar. Any such countersignature may be a facsimile. The Board may also make such additional rules and regulations as it may deem expedient concerning the issue, transfer and registration of certificates and uncertificated Shares.

ARTICLE VIII
INDEMNIFICATION

Section 1. Right to Indemnification. Each person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit, arbitration, alternative dispute mechanism, inquiry, judicial, administrative or legislative hearing, investigation or any other threatened, pending or completed proceeding, whether brought by or in the right of the Corporation or otherwise, including any and all appeals, whether of a civil, criminal, administrative, legislative, investigative or other nature (a "Proceeding"), by reason of the fact that such person is or was a director, officer, or employee of the Corporation or is or was serving at the request of the Corporation as a director, officer, manager or employee of an Affiliate or of another corporation, association, limited liability company, partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan (an "Indemnitee"), whether the basis of such Proceeding is alleged action in an official capacity as a director, officer, manager, employee or agent or in any other capacity while serving as a director, officer, manager, or employee or agent, shall be vested with the contractual right to indemnification and be held harmless by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended, against all expense, liability and loss (including attorneys' fees, judgments, fines, taxes, including ERISA excise taxes, or penalties and amounts paid in settlement) reasonably incurred or suffered by such Indemnitee in connection therewith if the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interest of the Corporation or other entity covered by this Article VIII, and, with respect to any criminal action or Proceeding, had no reasonable cause to believe that Indemnitee's conduct was unlawful. Such indemnification shall not be retroactively amended to adversely affect the rights of an Indemnitee in connection with any act, omissions, facts or circumstances occurring prior to the date of amendment, shall continue as to an Indemnitee who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the Indemnitee's heirs, executors and administrators; provided, however, that, except as provided in Section 3 of this Article VIII with respect to Proceedings to enforce rights to indemnification and advancement under this Article VIII, the Corporation shall indemnify any such Indemnitee in connection with a Proceeding (or part thereof) initiated by such Indemnitee (including claims and counterclaims, whether such counterclaims are asserted by (a) such Indemnitee, or (b) the Corporation in a Proceeding initiated by such Indemnitee) only if such Proceeding (or part thereof) was authorized by the Board of Directors of the Corporation. This Article shall supersede any conflicting provisions contained in the corporate governance documents of any Affiliate of the Corporation.

Section 2. Right to Advancement of Expenses. The Corporation shall pay the expenses (including attorney's fees) incurred by an Indemnitee in defending any Proceeding (an "Advancement of Expenses"); provided, however, that an Advancement of Expenses incurred by or on behalf of an Indemnitee shall be made only upon delivery to the Corporation of an undertaking (hereinafter an "Undertaking"), by or on behalf of such Indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which

there is no further right to appeal (a "Final Adjudication") that such Indemnitee is not entitled to be indemnified for such expenses under this Section 2 or otherwise.

Section 3. Right of Indemnitee to Bring Suit. The rights to indemnification and to the Advancement of Expenses conferred in Sections 1 and 2 of this Article VIII, as limited by Section 7 hereof, are contract rights. If a claim under Sections 1 or 2 of this Article VIII is not paid in full by the Corporation within 60 days after a written claim has been received by the Corporation, except in the case of a claim for an Advancement of Expenses, in which case the applicable period shall be 20 days, the Indemnitee may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim. If successful in whole or in part in any such suit, or in a suit brought by the Corporation to recover an Advancement of Expenses pursuant to the terms of an Undertaking, the Indemnitee shall be entitled to be paid also the expense of prosecuting or defending such suit to the fullest extent permitted by law. In (i) any suit brought by the Indemnitee to enforce a right to indemnification hereunder (but not in a suit brought by the Indemnitee to enforce a right to an Advancement of Expenses) it shall be a defense that, and (ii) in any suit by the Corporation to recover an Advancement of Expenses pursuant to the terms of an Undertaking, the Corporation shall be entitled to recover such expenses upon a Final Adjudication that, the Indemnitee has not met any applicable standard for indemnification set forth in the DGCL. Neither the failure of the Corporation (including its Board of Directors, a committee thereof or independent legal counsel) to have made a determination prior to the commencement of such suit that indemnification of the Indemnitee is proper in the circumstances because the Indemnitee has met the applicable standard of conduct set forth in the DGCL, nor an actual determination by the Corporation (including its Board of Directors, a committee thereof or independent legal counsel) that the Indemnitee has not met such applicable standard of conduct, shall create a presumption that the Indemnitee has not met the applicable standard of conduct or, in the case of such a suit brought by the Indemnitee, be a defense to such suit. In any suit brought by the Indemnitee to enforce a right to indemnification or to an Advancement of Expenses hereunder, or by the Corporation to recover an Advancement of Expenses pursuant to the terms of an Undertaking, the burden of proving that the Indemnitee is not entitled to be indemnified, or to such Advancement of Expenses, under this Article or otherwise shall be on the Corporation.

Section 4. Non-Exclusivity of Rights. The rights to indemnification and to the Advancement of Expenses conferred in this Article shall not be exclusive of any other right which any person may have or hereafter acquire under any statute, the Corporation's Certificate of Incorporation, Bylaws, agreement, vote of Stockholders or disinterested directors or otherwise.

Section 5. Insurance. The Corporation may maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or any person serving at the request of the Corporation as a director, officer, manager, employee or agent of another corporation, association, limited liability company, partnership, joint venture, trust or other enterprise, against any expense, liability or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the DGCL.

Section 6. Indemnification of Agents of the Corporation. The Corporation may, to the extent authorized from time to time by the Board of Directors or its designee, grant rights to indemnification, and to the Advancement of Expenses to any agent of the Corporation to the fullest extent of the provisions of this Article VIII with respect to the indemnification and Advancement of Expenses of directors and officers of the Corporation.

Section 7. Limitations on Indemnification. All indemnification and insurance provisions contained in this Article VIII are subject to the limitations and prohibitions imposed by federal law, including the Securities Act of 1933 and the Federal Deposit Insurance Act, and any implementing regulations concerning indemnification.

Section 8. Severability. If any provision or provisions of this Article VIII shall be held to be invalid, illegal or unenforceable for any reason whatsoever (a) the validity, legality and enforceability of the remaining provisions of this Article VIII (including, without limitation, all portions of any paragraph of this Article VIII containing any such provision held to be invalid, illegal or unenforceable, that are not by themselves invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby, and (b) to the fullest extent possible, the provisions of this Article VIII (including, without limitation, all portions of any paragraph of this Article VIII containing any such provision held to be invalid, illegal or unenforceable, that are not themselves invalid, illegal or unenforceable) shall be construed so as to give effect to the intent of the parties that the Corporation provide protection to the Indemnitee to the fullest enforceable extent.

ARTICLE IX
GENERAL PROVISIONS

Section 1. Execution of Instruments. All indentures, mortgages, deeds, conveyances, contracts, notes, drafts, loan documents, letters of credit, master agreements, swap agreements, guarantees, discharges, releases, satisfactions, settlements, affidavits, bonds, undertakings, powers of attorney, and other instruments or contracts may be signed, executed, acknowledged, verified, attested, delivered or accepted on behalf of the Corporation by an Officer (as such term is defined in Article VI, Section 1) or any individual who is listed on the Corporation's Officer's payroll file in a position equal to any of the Officers, or such other officers, employees or agents as the Board of Directors, the Chief Executive Officer or any Officer reporting directly to the Chief Executive Officer may direct in a written delegation kept in the minute book of the Corporation. The provisions of this Section 1 are supplementary to any other provision of these Bylaws and shall not be construed to authorize execution of instruments otherwise dictated by law.

Section 2. Voting of Ownership Interests. The Chief Executive Officer, the President, any Vice Chair, any Executive Officer, the Secretary, the Treasurer, or such other Officers, employees or agents as the Board of Directors or such designated Officers may direct are authorized to vote, represent and exercise on behalf of the Corporation all rights incident to any and all shares of stock or other ownership interests in any Affiliate or any other corporations, associations, limited liability companies, partnerships, or other entities standing in the name of the Corporation. The

authority herein granted to the individuals to vote or represent on behalf of the Corporation any and all ownership interests held by the Corporation may be exercised either by the individuals in person or by any duly executed proxy or power of attorney.

Section 3. Distributions. The Board of Directors may from time to time authorize, and the Corporation may pay or distribute, dividends or other distributions on its outstanding Shares in such manner and upon such terms and conditions as are permitted by the Certificate of Incorporation and the DGCL.

Section 4. Seal and Attestation. Any Officer of the Corporation is empowered to affix the corporate seal on all documents, and may attest the signature of any person executing an instrument on behalf of the Corporation. In the execution on behalf of the Corporation of any instrument, document, writing, notice or paper, it shall not be necessary to affix the corporate seal of the Corporation thereon, and any such instrument, document, writing, notice or paper when executed without said seal affixed thereon shall be of the same force and effect and as binding on the Corporation as if said corporate seal had been affixed thereon in each instance.

Section 5. Amendments. The Board of Directors may amend or repeal these Bylaws and may adopt new Bylaws; provided, however, that any amendment or repeal of, or the adoption of any Bylaw inconsistent with, Article III, Section 10 of these Bylaws shall also require the approval of the Stockholders of the Corporation. The Stockholders of the Corporation may also amend or repeal these Bylaws and may adopt new Bylaws.

Section 6. Exclusive Forum. Unless the Corporation consents in writing to the selection of an alternative forum, (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer, or other employee or agent or stockholder of the Corporation to the Corporation or the Corporation's stockholders, including a claim alleging the aiding and abetting of such a breach of fiduciary duty, (iii) any action asserting a claim against the Corporation or any current or former director, officer or other employee or agent of the Corporation arising pursuant to any provision of the DGCL or the Corporation's Certificate of Incorporation or these Bylaws (as any of the foregoing may be amended or restated from time to time), or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware; (iv) any action asserting a claim governed by the internal affairs doctrine of the State of Delaware; or (v) any action asserting an "internal corporate claim" as that term is defined in Section 115 of the DGCL, shall be solely and exclusively brought in the Court of Chancery of the State of Delaware (or, if the Delaware Court of Chancery in the State of Delaware determines that it lacks jurisdiction over any such action or proceeding, another state or federal court located within the State of Delaware). Any person or entity purchasing or otherwise acquiring or holding any interest in Shares of capital stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Article IX, Section 6.

ARTICLE X
EMERGENCY BYLAWS

Section 1. Emergency Bylaws. This Article X shall be operative during any emergency resulting from an attack on the United States or on a locality in which the Corporation conducts its business or customarily holds meetings of its Board of Directors or its Stockholders, or during any nuclear or atomic disaster or during the existence of any catastrophe, including, but not limited to, an epidemic or pandemic, and a declaration of a national emergency by the United States government, or other similar emergency condition, irrespective of whether a quorum of the Board of Directors or a standing committee thereof can be readily convened for action (an "Emergency"), notwithstanding any different or conflicting provision in the preceding Articles of these Bylaws, in the Certificate of Incorporation or in the DGCL. Without limiting any powers or emergency actions that the Board of Directors may take during an Emergency, during an Emergency, the Board of Directors may take any action that it determines to be practical and necessary to address the circumstances of the Emergency including, without limitation, taking the actions with respect to stockholder meetings and dividends as provided in the DGCL. To the extent not inconsistent with the provisions of this Article, the Bylaws provided in the preceding Articles and the provisions of the Certificate of Incorporation of the Corporation shall remain in effect during such Emergency, and upon termination of such Emergency, the provisions of this Article X shall cease to be operative.

Section 2. Meetings. During any Emergency, a meeting of the Board of Directors, or any committee thereof, may be called by any member of the Board of Directors, the Chair of the Board, the Lead Independent Director, the Chief Executive Officer, President, a Vice Chair, the Secretary or any Officer reporting directly to the Chief Executive Officer. Notice of the time and place of the meeting shall be given by any available means of communication by the person calling the meeting to such of the directors and the members of the Corporation's Management Operating Committee, or any successor committee thereto, (the "Designated Officers") as it may be feasible to reach. Such notice shall be given at such time in advance of the meeting as, in the judgment of the person calling the meeting, circumstances permit. As a result of any Emergency, the Board of Directors may determine that a meeting of Stockholders not be held at any place, but instead be held solely by means of remote communication in accordance with the DGCL.

Section 3. Quorum. At any meeting of the Board of Directors, or any committee thereof, called in accordance with Section 2 of this Article X, the presence of one director shall constitute a quorum for the transaction of business. Vacancies on the Board of Directors, or any committee thereof, may be filled by a majority vote of the directors in attendance at the meeting. In the event that no directors are able to attend a meeting of the Board of Directors, then the Designated Officers in attendance shall serve as directors for the meeting, without any additional quorum requirement and with full powers to act as directors of the Corporation.

Section 4. Amendments. At any meeting called in accordance with Section 2 of this Article X, the Board of Directors or the committees thereof, as the case may be, may modify, amend or

add to the provisions of this Article X so as to make any provision that may be practical or necessary for the circumstances of the Emergency.

Section 5. Contingency Plan. The Corporation may develop a contingency plan for the management of the Corporation in the event of an Emergency. The contingency plan may be reviewed or modified by the Board of Directors from time to time as provided in this Article X.

Section 6. Liability. No Officer, director or employee of the Corporation acting in accordance with the provisions of this Article X shall be liable except for willful misconduct.

Section 7. Repeal or Change. The provisions of this Article X shall be subject to repeal or change by further action of the Board of Directors or by action of the Stockholders, but no such repeal or change shall modify the provisions of Section 6 of this Article X with regard to action taken prior to the time of such repeal or change.

Exhibit 4.30

DESCRIPTION OF REGISTRANT'S SECURITIES REGISTERED UNDER SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

As of December 31, 2022, Bank of America Corporation (the "**Company**") had the following classes of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"):

- Common Stock, par value $0.01 per share
- Depositary Shares, each representing a 1/1,000th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series E
- Depositary Shares, each representing a 1/1,000th interest in a share of 6.00% Non-Cumulative Preferred Stock, Series GG
- Depositary Shares, each representing a 1/1,000th interest in a share of 5.875% Non-Cumulative Preferred Stock, Series HH
- Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 1
- Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 2
- Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 4
- Depositary Shares, each representing a 1/1,200th interest in a share of Bank of America Corporation Floating Rate Non-Cumulative Preferred Stock, Series 5
- Depositary Shares, each representing a 1/1,000th interest in a share of 5.375% Non-Cumulative Preferred Stock, Series KK
- Depositary Shares, each representing a 1/1,000th interest in a share of 5.000% Non-Cumulative Preferred Stock, Series LL
- Depositary Shares, each representing a 1/1,000th interest in a share of 4.375% Non-Cumulative Preferred Stock, Series NN
- Depositary Shares, each representing a 1/1,000th interest in a share of 4.125% Non-Cumulative Preferred Stock, Series PP
- Depositary Shares, each representing a 1/1,000th interest in a share of 4.250% Non-Cumulative Preferred Stock, Series QQ
- Depositary Shares, each representing a 1/1,000th interest in a share of 4.750% Non-Cumulative Preferred Stock, Series SS
- 7.25% Non-Cumulative Perpetual Convertible Preferred Stock, Series L
- Floating Rate Preferred Hybrid Income Term Securities of BAC Capital Trust XIII (and the guarantee related thereto)
- 5.63% Fixed to Floating Rate Preferred Hybrid Income Term Securities of BAC Capital Trust XIV (and the guarantee related thereto)
- Income Capital Obligation Notes initially due December 15, 2066 of Bank of America Corporation
- Senior Medium-Term Notes, Series A, Step Up Callable Notes, due November 28, 2031, of BofA Finance LLC (and the guarantee of the Company with respect thereto)

DESCRIPTION OF COMMON STOCK

This section describes the general terms and provisions of the shares of the Company's common stock. You should read the Company's Restated Certificate of Incorporation (the "**Restated Certificate of Incorporation**") and the Company's by-laws (the "**Bylaws**") for additional information about the common stock. The Restated Certificate of Incorporation and the Bylaws are included as exhibits to the Company's Annual Report on Form 10-K, to which this exhibit also is attached.

General

As of December 31, 2022, under the Restated Certificate of Incorporation, the Company is authorized to issue twelve billion eight hundred million (12,800,000,000) shares of common stock, par value $.01 per share (the "**Common Stock**"), of which approximately 8.0 billion shares were outstanding. The Common Stock trades on the New York Stock Exchange (the "**NYSE**") under the symbol "BAC." As of December 31, 2022, approximately 490.9 million shares were reserved for issuance in connection with the Company's various employee and director benefit plans, the conversion of outstanding securities convertible into shares of the Common Stock, and for other purposes. After taking into account the reserved shares, there were approximately 4.3 billion authorized shares of Common Stock available for issuance as of December 31, 2022.

Shares of newly issued Common Stock will be uncertificated unless the Company's board of directors (the "**Board**") by resolution determines otherwise. Shares represented by an existing certificate will remain certificated until such certificate is surrendered to the Company.

Voting and Other Rights

Holders of the Common Stock are entitled to one vote per share. There are no cumulative voting rights. In general, a majority of votes cast on a matter is sufficient to take action upon routine matters, including the election of directors in an uncontested election. However, (1) amendments to the Restated Certificate of Incorporation generally must be approved by the affirmative vote of the holders of a majority of the voting power of the outstanding stock, and (2) a merger, dissolution, or the sale of all or substantially all of the Company's assets generally must be approved by the affirmative vote of the holders of a majority of the voting power of the outstanding stock.

In the event of the Company's liquidation, holders of the Common Stock will be entitled to receive pro rata any assets legally available for distribution to stockholders, subject to any prior rights of any preferred stock then outstanding.

The Common Stock does not have any preemptive rights, redemption privileges, sinking fund privileges, or conversion rights. All the outstanding shares of the Common Stock are, and, upon proper conversion of any convertible securities, all of the shares of Common Stock into which those securities are converted will be, validly issued, fully paid, and nonassessable.

Computershare Trust Company, N.A. is the transfer agent and registrar for the Common Stock.

Dividends

Subject to the preferential rights of any holders of any outstanding series of preferred stock, the holders of the Common Stock are entitled to receive dividends or distributions, whether payable in cash or otherwise, as the Board may declare out of funds legally available for

payments. Stock dividends, if any are declared, may be paid from the Company's authorized but unissued shares of Common Stock.

Certain Anti-Takeover Matters

Certain provisions of Delaware law and of the Restated Certificate of Incorporation and Bylaws could make it more difficult for a third party to acquire control of the Company or have the effect of discouraging a third party from attempting to acquire control of the Company. For example, the Company is subject to Section 203 of the Delaware General Corporation Law, which would make it more difficult for another party to acquire the Company without the approval of the Board. Certain provisions of the Restated Certificate of Incorporation and Bylaws may make it less likely that the Company's management would be changed or that someone would acquire voting control of the Company without the Board's consent. These provisions could make it more difficult for a third party to acquire the Company even if an acquisition might be in the best interest of the Company's stockholders.

Preferred Stock. The Board can, at any time, under the Restated Certificate of Incorporation and without stockholder approval, issue one or more new series of preferred stock. In some cases, the issuance of preferred stock without stockholder approval could discourage or make more difficult attempts to take control of the Company through a merger, tender offer, proxy contest or otherwise. Preferred stock with special voting rights or other features issued to persons favoring the Company's management could stop a takeover by preventing the person trying to take control of the Company from acquiring enough voting shares necessary to take control. For a description of the outstanding series of the Company's preferred stock as of December 31, 2022, see "Description of Preferred Stock" below.

Advance Notice Requirements. The Bylaws establish advance notice procedures with regard to stockholder proposals relating to nominations for the election of directors or other business to be brought before meetings of the Company's stockholders. These procedures provide that notice of such stockholder proposals must be timely given to the Company's corporate secretary prior to the meeting at which the action is to be taken. The notice must contain certain information specified in the Bylaws and must otherwise comply with the Bylaws.

Vacancies. Under the Bylaws, a majority vote of the Board may increase or decrease the number of directors. Any director may be removed at any time with or without cause by the affirmative vote of the holders of a majority of the voting power of the outstanding shares then entitled to vote at an election of directors. Any vacancy on the Board or newly created directorship will be filled by a majority vote of the remaining directors then in office, and those newly elected directors will serve for a term expiring at the next annual meeting of stockholders, and until such directors' successor has been elected and qualified.

Amendment of Bylaws. The Bylaws may be adopted, amended or repealed by a majority of the Board, subject to certain limitations in the Bylaws. The Company's stockholders also have the power to adopt, amend or repeal the Bylaws.

DESCRIPTION OF PREFERRED STOCK

This section summarizes the general terms and provisions of all series of the Company's preferred stock outstanding as of December 31, 2022. Certain of these series of preferred stock (or depositary shares representing a fractional interest in a share of such series of preferred stock) are registered under Section 12 of the Exchange Act, as indicated in each case by noting its listing. Reference is made to the Restated Certificate of Incorporation and the respective certificates of designations for each series of the Company's preferred stock for complete information about the provisions of that series of preferred stock. See also "Description of Common Stock – Certain Anti-Takeover Matters" above.

Existing Series of Preferred Stock

As of December 31, 2022, under the Restated Certificate of Incorporation, the Company has authority to issue 100,000,000 shares of preferred stock, par value $.01 per share. As of December 31, 2022, the Company had approximately 4.1 million issued and outstanding shares of preferred stock and the aggregate liquidation preference of all of the Company's outstanding preferred stock was approximately $28.7 billion. All outstanding shares of the Company's preferred stock are fully paid and nonassessable. Of the Company's authorized and outstanding preferred stock, as of December 31, 2022:

- 35,045 shares were designated as 7% Cumulative Redeemable Preferred Stock, Series B (the "**Series B Preferred Stock**"), having a liquidation preference of $100 per share, 7,076 shares of which were issued and outstanding;

- 85,100 shares were designated as Floating Rate Non-Cumulative Preferred Stock, Series E (the "**Series E Preferred Stock**"), having a liquidation preference of $25,000 per share, 12,317 shares of which were issued and outstanding;

- 7,001 shares were designated as Floating Rate Non-Cumulative Preferred Stock, Series F (the "**Series F Preferred Stock**"), having a liquidation preference of $100,000 per share, 1,409 shares of which were issued and outstanding;

- 8,501 shares were designated as Adjustable Rate Non-Cumulative Preferred Stock, Series G (the "**Series G Preferred Stock**"), having a liquidation preference of $100,000 per share, 4,925 shares of which were issued and outstanding;

- 6,900,000 shares were designated as 7.25% Non-Cumulative Perpetual Convertible Preferred Stock, Series L (the "**Series L Preferred Stock**"), having a liquidation preference of $1,000 per share, 3,080,182 shares of which were issued and outstanding;

- 40,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series U (the "**Series U Preferred Stock**"), having a liquidation preference of $25,000 per share, 40,000 shares of which were issued and outstanding;

- 80,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series X (the "**Series X Preferred Stock**"), having a liquidation preference of $25,000 per share, 80,000 shares of which were issued and outstanding;

- 56,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series Z (the "**Series Z Preferred Stock**"), having a liquidation preference of $25,000 per share, 56,000 shares of which were issued and outstanding;

- 76,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series AA (the "**Series AA Preferred Stock**"), having a liquidation preference of $25,000 per share, 76,000 shares of which were issued and outstanding;

- 40,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series DD (the "**Series DD Preferred Stock**"), having a liquidation preference of $25,000 per share, 40,000 shares of which were issued and outstanding;

- 94,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series FF (the "**Series FF Preferred Stock**"), having a liquidation preference of $25,000 per share, 90,833 shares of which were issued and outstanding;

- 55,200 shares were designated as 6.000% Non-Cumulative Preferred Stock, Series GG (the "**Series GG Preferred Stock**"), having a liquidation preference of $25,000 per share, 54,000 shares of which were issued and outstanding;

- 34,160 shares were designated as 5.875% Non-Cumulative Preferred Stock, Series HH (the "**Series HH Preferred Stock**"), having a liquidation preference of $25,000 per share, 34,049 shares of which were issued and outstanding;

- 40,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series JJ (the "**Series JJ Preferred Stock**"), having a liquidation preference of $25,000 per share, 34,171 shares of which were issued and outstanding;

- 60,950 shares were designated as 5.375% Non-Cumulative Preferred Stock, Series KK (the "**Series KK Preferred Stock**"), having a liquidation preference of $25,000 per share, 55,273 shares of which were issued and outstanding;

- 52,400 shares were designated as 5.000% Non-Cumulative Preferred Stock, Series LL (the "**Series LL Preferred Stock**"), having a liquidation preference of $25,000 per share, 52,045 shares of which were issued and outstanding;

- 44,000 shares were designated as Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series MM (the "**Series MM Preferred Stock**"), having a liquidation preference of $25,000 per share, 30,753 shares of which were issued and outstanding;

- 44,000 shares were designated as 4.375% Non-Cumulative Preferred Stock, Series NN (the "**Series NN Preferred Stock**"), having a liquidation preference of $25,000 per share, 42,993 shares of which were issued and outstanding;

- 36,600 shares were designated as 4.125% Non-Cumulative Preferred Stock, Series PP (the "**Series PP Preferred Stock**"), having a liquidation preference of $25,000 per share, 36,500 shares of which were issued and outstanding;

- 52,000 shares were designated as 4.250% Non-Cumulative Preferred Stock, Series QQ (the "**Series QQ Preferred Stock**"), having a liquidation preference of $25,000 per share, 51,879 shares of which were issued and outstanding;

- 70,000 shares were designated as 4.375% Fixed-Rate Reset Non-Cumulative Preferred Stock, Series RR (the "**Series RR Preferred Stock**"), having a liquidation preference of $25,000 per share, 66,738 shares of which were issued and outstanding;

- 28,000 shares were designated as 4.750% Non-Cumulative Preferred Stock, Series SS (the "**Series SS Preferred Stock**"), having a liquidation preference of $25,000 per share, 27,463 shares of which were issued and outstanding;

- 80,000 shares were designated as 6.125% Fixed-Rate Reset Non-Cumulative Preferred Stock, Series TT (the "**Series TT Preferred Stock**"), having a liquidation preference of $25,000 per share, 80,000 shares of which were issued and outstanding;

- 21,000 shares were designated as Floating Rate Non-Cumulative Preferred Stock, Series 1 (the "**Series 1 Preferred Stock**"), having a liquidation preference of $30,000 per share, 3,186 shares of which were issued and outstanding;

- 37,000 shares were designated as Floating Rate Non-Cumulative Preferred Stock, Series 2 (the "**Series 2 Preferred Stock**"), having a liquidation preference of $30,000 per share, 9,967 shares of which were issued and outstanding;

- 20,000 shares were designated as Floating Rate Non-Cumulative Preferred Stock, Series 4 (the "**Series 4 Preferred Stock**"), having a liquidation preference of $30,000 per share, 7,010 shares of which were issued and outstanding; and

- 50,000 shares were designated as Floating Rate Non-Cumulative Preferred Stock, Series 5 (the "**Series 5 Preferred Stock**"), having a liquidation preference of $30,000 per share, 13,331 shares of which were issued and outstanding.

In addition, as of December 31, 2022, the following series of preferred stock were designated, but no shares of any of these series were outstanding: (1) approximately 1.03 million shares of ESOP Convertible Preferred Stock, Series C; (2) approximately 20 million shares of $2.50 Cumulative Convertible Preferred Stock, Series BB; (3) 50,000 shares of 6% Non-Cumulative Perpetual Preferred Stock, Series T; (4) 44,000 shares of 6.500% Non-Cumulative Preferred Stock, Series Y; (5) 44,000 shares of 6.200% Non-Cumulative Preferred Stock, Series CC; and (6) 36,000 shares of 6.000% Non-Cumulative Preferred Stock, Series EE.

Series B Preferred Stock

Preferential Rights. The Series B Preferred Stock ranks senior to the Common Stock and ranks equally with the Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on liquidation. Shares of the Series B Preferred Stock are not convertible into or exchangeable for any shares of Common Stock or any other class of the Company's capital stock. Holders of the Series B Preferred Stock do not have any preemptive rights, and the Series B Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences superior or equal to the Series B Preferred Stock without the consent of holders of Series B Preferred Stock.

Dividends. Holders of shares of Series B Preferred Stock are entitled to receive, when and as declared by the Board, cumulative cash dividends at an annual dividend rate per share of 7.00% of the stated value per share of Series B Preferred Stock. The stated value per share of the Series B Preferred Stock is $100. Dividends are payable quarterly on such dates that are fixed by the Board. The Company cannot declare or pay cash dividends on any shares of Common Stock

unless full cumulative dividends on the Series B Preferred Stock have been paid or declared and funds sufficient for the payment have been set apart.

Voting Rights. Each share of Series B Preferred Stock has equal voting rights, share for share, with each share of Common Stock.

Distributions. In the event of the Company's voluntary or involuntary dissolution, liquidation, or winding up, the holders of Series B Preferred Stock are entitled to receive, after payment of the full liquidation preference on shares of any class of preferred stock ranking senior to the Series B Preferred Stock, but before any distribution on shares of Common Stock, liquidating distributions in the amount of the liquidation preference of $100 per share plus accumulated dividends.

Redemption. Shares of Series B Preferred Stock are redeemable, in whole or in part, at the option of the holders, at the redemption price of $100 per share plus accumulated and unpaid dividends, provided that (1) full cumulative dividends have been paid, or declared, and funds sufficient for payment set apart, on any class or series of preferred stock ranking senior to the Series B Preferred Stock; and (2) the Company is not then in default or in arrears on any sinking fund or analogous fund or call for tenders obligation or agreement for the purchase of any class or series of preferred stock ranking senior to Series B Preferred Stock. The Series B Preferred Stock is not subject to any mandatory redemption provisions or redemption at the option of the Company.

Series E Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series E Preferred Stock are listed on the NYSE under the symbol "BAC PrE". See "Description of Depositary Shares" below.

Preferential Rights. The Series E Preferred Stock ranks senior to the Common Stock and ranks equally with the Series B Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series E Preferred Stock is not convertible into or exchangeable for any shares of the Company's Common Stock or any other class of its capital stock. Holders of the Series E Preferred Stock do not have any preemptive rights, and the Series E Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences superior or equal to the Series E Preferred Stock without the consent of the holders of the Series E Preferred Stock.

Dividends. Holders of the Series E Preferred Stock are entitled to receive non-cumulative cash dividends when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share of Series E Preferred Stock, payable quarterly in arrears on each February 15, May 15, August 15 and November 15 to record holders as of the last business day (as defined in the certificate of designations for the Series E Preferred Stock) of the calendar month immediately preceding the month in which the dividend payment date falls. Dividends on each share of Series E Preferred Stock accrue on the liquidation preference of $25,000 per share at an annual rate per share equal to the greater of (a) three-month LIBOR plus a spread of 0.35%, and (b) 4.00%. The amount of dividends shall be computed on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day, then that dividend payment will be made on the next succeeding day that is a business day, unless that day

falls in the next calendar year in which case payment will occur on the immediately preceding business day, in either case without any interest in respect of such delay.

As long as shares of Series E Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series E Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series E Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series E Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series E Preferred Stock for any period unless full dividends on all outstanding shares of Series E Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series E Preferred Stock and on any capital stock ranking equally with the Series E Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series E Preferred Stock and the holders of any capital stock ranking equally with the Series E Preferred Stock.

Voting Rights. Holders of Series E Preferred Stock do not have voting rights, except as specifically required by Delaware law and in the case of certain dividend arrearages in relation to the Series E Preferred Stock. Whenever dividends payable on the Series E Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series E Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, at least six quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series E Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two additional directors of the Board to fill two newly-created directorships (the "**Preferred Stock Directors**"). When the Company has paid full dividends on the Series E Preferred Stock and any such other series of preferred stock for at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series E Preferred Stock are entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series E Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series E Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation. Shares of Series E Preferred Stock are not subject to a sinking fund.

Redemption. The Company may redeem the Series E Preferred Stock in whole or in part, at its option, on any dividend payment date for the Series E Preferred Stock, at the redemption price equal to $25,000 per share, plus any declared and unpaid dividends. Holders of the Series E Preferred Stock do not have any optional redemption rights.

Series F Preferred Stock

Preferential Rights. The Series F Preferred Stock ranks senior to the Common Stock and ranks equally with the Series B Preferred Stock, Series E Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred

Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. The Series F Preferred Stock is not convertible into or exchangeable for any shares of the Common Stock or any other class of the Company's capital stock. Holders of the Series F Preferred Stock do not have any preemptive rights and the Series F Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences superior or equal to the Series F Preferred Stock without the consent of the holders of the Series F Preferred Stock.

Dividends. Holders of the Series F Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $100,000 per share of Series F Preferred Stock, payable quarterly in arrears on each March 15, June 15, September 15 and December 15 to record holders as of the last business day (as defined in the certificate of designations for the Series F Preferred Stock) of the calendar month immediately preceding the month in which the dividend payment date falls. Dividends on each share of Series F Preferred Stock will accrue on the liquidation preference of $100,000 per share at an annual rate per share equal to the greater of (a) three-month LIBOR plus a spread of 0.40%, and (b) 4.00%. The amount of dividends shall be computed on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day, then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day, in either case without any interest or other payment in respect of such delay.

As long as shares of Series F Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series F Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series F Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series F Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series F Preferred Stock unless full dividends on all outstanding shares of Series F Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series F Preferred Stock and on any capital stock ranking equally with the Series F Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series F Preferred Stock and the holders of any capital stock ranking equally with the Series F Preferred Stock.

Voting Rights. Holders of Series F Preferred Stock do not have voting rights, except as specifically required by Delaware law.

Distributions. In the event of the Company's voluntary of involuntary liquidation, dissolution, or winding up, holders of Series F Preferred Stock are entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series F Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series F Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $100,000 per share, plus any declared and unpaid dividends, without accumulation

of any undeclared dividends, to the date of liquidation. Shares of Series F Preferred Stock are not subject to a sinking fund.

Redemption. The Company may redeem the Series F Preferred Stock, in whole or in part, at its option, on any dividend payment date for the Series F Preferred Stock at the redemption price equal to $100,000 per share, plus dividends that have been declared but not paid plus any accrued and unpaid dividends for the then-current dividend period to the redemption date. Holders of the Series F Preferred Stock do not have any optional redemption rights.

Series G Preferred Stock

Preferential Rights. The Series G Preferred Stock ranks senior to the Common Stock and ranks equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. The Series G Preferred Stock is not convertible into or exchangeable for any shares of the Common Stock or any other class of the Company's capital stock. Holders of the Series G Preferred Stock do not have any preemptive rights, and the Series G Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences superior or equal to the Series G Preferred Stock without the consent of the holders of the Series G Preferred Stock.

Dividends. Holders of the Series G Preferred Stock are entitled to receive non-cumulative cash dividends when, as, and if declared by the Board or a duly authorized committee the Board out of funds legally available for payment, on the liquidation preference of $100,000 per share of Series G Preferred Stock, payable quarterly in arrears on each March 15, June 15, September 15 and December 15 to record holders as of the last business day (as defined in the certificate of designations for the Series G Preferred Stock) of the calendar month immediately preceding the month in which the dividend payment date falls. Dividends on each share of Series G Preferred Stock will accrue on the liquidation preference of $100,000 per share at an annual rate per share equal to the greater of (a) three-month LIBOR plus a spread of 0.40%, and (b) 4.00%. The amount of dividends shall be computed on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day, then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day, in either case without any interest or other payment in respect of such delay.

As long as shares of Series G Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series G Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series G Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series G Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series G Preferred Stock unless full dividends on all outstanding shares of Series G Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series G Preferred Stock and on any capital stock ranking equally with the Series G Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares

of Series G Preferred Stock and the holders of any capital stock ranking equally with the Series G Preferred Stock.

Voting Rights. Holders of Series G Preferred Stock do not have voting rights, except as specifically required by Delaware law.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series G Preferred Stock are entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of capital stock ranking junior to the Series G Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series G Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $100,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation. Shares of Series G Preferred Stock are not subject to a sinking fund.

Redemption. The Company may redeem the Series G Preferred Stock, in whole or in part, at its option, on any dividend payment date for the Series G Preferred Stock at the redemption price equal to $100,000 per share, plus dividends that have been declared but not paid plus any accrued and unpaid dividends for the then-current dividend period to the redemption date. Holders of the Series G Preferred Stock do not have any optional redemption rights.

Series L Preferred Stock

Listing. The Series L Preferred Stock is listed on the NYSE under the symbol "BAC PrL".

Preferential Rights. The Series L Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Holders of the Series L Preferred Stock do not have any preemptive rights, and the Series L Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences superior or equal to the Series L Preferred Stock without the consent of the holders of the Series L Preferred Stock.

Dividends. Holders of the Series L Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 7.25% on the liquidation preference of $1,000 per share of Series L Preferred Stock, payable quarterly in arrears on each January 15, April 15, July 15 and October 15 to record holders as of the first day of the calendar month in which the dividend payment date falls. The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series L Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day, in either case without any interest or other payment in respect of such delay.

As long as shares of Series L Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends on any shares of Common Stock or other capital stock ranking

junior to the Series L Preferred Stock or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series L Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series L Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series L Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series L Preferred Stock for any period unless full dividends on all outstanding shares of Series L Preferred Stock for the then-current dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series L Preferred Stock and on any capital stock ranking equally with the Series L Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series L Preferred Stock and the holders of any capital stock ranking equally with the Series L Preferred Stock.

Conversion Right. Each share of the Series L Preferred Stock may be converted at any time, at the option of the holder, into 20 shares of the Common Stock (which reflects an initial conversion price of $50.00 per share of Common Stock) plus cash in lieu of fractional shares, subject to anti-dilution adjustments.

Conversion at the Company's Option. The Company may, at its option, at any time or from time to time, cause some or all of the Series L Preferred Stock to be converted into shares of its Common Stock at the then-applicable conversion rate if, for 20 trading days during any period of 30 consecutive trading days, the closing price of its Common Stock exceeds 130% of the then-applicable conversion price of the Series L Preferred Stock.

Conversion Upon Certain Acquisitions. If a make-whole acquisition occurs, holders of Series L Preferred Stock may cause the Series L Preferred Stock held by such holder to be converted into shares of the Common Stock, and the Company will, under certain circumstances, increase the conversion rate in respect of such conversions of the Series L Preferred Stock that occur during the period beginning on the effective date of the make-whole acquisition and ending on the date that is 30 days after the effective date by a number of additional shares of Common Stock. The amount of the make-whole adjustment, if any, will be based upon the price per share of the Common Stock and the effective date of the make-whole acquisition. Subject to certain exceptions, a "make-whole acquisition" occurs in the event of (1) the acquisition by a person or group of more than 50% of the voting power of the Common Stock or (2) the Company's consolidation or merger where it is not the surviving entity.

Conversion Upon Fundamental Change. In lieu of receiving the make-whole shares described above, if the reference price (as defined below) in connection with a make-whole acquisition is less than the applicable conversion price (a "fundamental change"), a holder may elect to convert each share of the Series L Preferred Stock during the period beginning on the effective date of the fundamental change and ending on the date that is 30 days after the effective date of such fundamental change at an adjusted conversion price equal to the greater of (1) the "reference price," which is the price per share of the Common Stock paid in the event of a fundamental change, and (2) $19.95, which is 50% of the closing price of the Common Stock on January 24, 2008, the date of the initial offering of the Series L Preferred Stock, subject to adjustment (the "base price"). If the reference price is less than the base price, holders of the Series L Preferred Stock will receive a maximum of 50.1253 shares of the Common Stock per share of Series L Preferred Stock, subject to adjustment, which may result in a holder receiving value that is less than the liquidation preference of the Series L Preferred Stock.

Anti-Dilution Adjustments. The conversion rate may be adjusted in the event of, among other things, (1) stock dividend distributions, (2) subdivisions, splits, and combinations of the Common Stock, (3) issuance of stock purchase rights, (4) debt or asset distributions, (5) increases in cash dividends, and (6) tender or exchange offers for the Common Stock.

Voting Rights. Holders of Series L Preferred Stock do not have voting rights, except as specifically required by Delaware law and in the case of certain dividend arrearages in relation to the Series L Preferred Stock. Whenever dividends payable on the Series L Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series L Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid for the equivalent of at least six quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series L Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. Upon the conversion of all of the Series L Preferred Stock, or when the Company has paid full dividends on the Series L Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series L Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series L Preferred Stock, and subject to the rights of holders of securities ranking senior to or on a parity with the Series L Preferred Stock and after satisfaction of all liabilities to creditors, a liquidating distribution in the amount of the liquidation preference of $1,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company does not have any rights to redeem the Series L Preferred Stock, and holders of the Series L Preferred Stock do not have any optional redemption rights.

Series U Preferred Stock

Preferential Rights. The Series U Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series X Preferred Stock, , Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series U Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series U Preferred Stock do not have any preemptive rights, and the Series U Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series U Preferred Stock without the consent of the holders of the Series U Preferred Stock.

Dividends. Holders of the Series U Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share, payable (a) for the "fixed rate period", semi-annually in arrears on each June 1 and December 1, and (b) for the "floating rate period", quarterly in arrears on each March 1, June 1, September 1 and December 1, beginning September 1, 2023, in each case to record holders as of the fifteenth day of the calendar month immediately preceding the month in which the dividend payment date falls. Dividends on each share of Series U Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 5.20%, for each dividend period from the issue date to, but excluding, June 1, 2023 (the "fixed rate period"), and (2) thereafter, at a floating rate equal to three-month LIBOR plus a spread of 3.135%, for each dividend period from, and including, June 1, 2023 (the "floating rate period"). The amount

of dividends shall be computed (x) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (y) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series U Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless, for the fixed rate period, that day falls in the next calendar year or, for the floating rate period, that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding business day), (i) on or prior to June 1, 2023, without any interest or other payment in respect of such delay, and (ii) after June 1, 2023, with dividends accruing to the actual payment date.

As long as shares of Series U Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series U Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series U Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series U Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series U Preferred Stock for any period unless full dividends on all outstanding shares of Series U Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series U Preferred Stock and on any capital stock ranking equally with the Series U Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series U Preferred Stock and the holders of any capital stock ranking equally with the Series U Preferred Stock.

Voting Rights. Holders of Series U Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series U Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series U Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, as applicable, whether or not for consecutive dividend periods, the holders of the Series U Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series U Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series U Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series U Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series U Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series U Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series U Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series U Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series U Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series U Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series U Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series U Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series U Preferred Stock, in whole or in part, at its option, at any time on or after June 1, 2023, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends, for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series U Preferred Stock, the Company may redeem the Series U Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series U Preferred Stock do not have any optional redemption rights.

Series X Preferred Stock

Preferential Rights. The Series X Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series X Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series X Preferred Stock do not have any preemptive rights, and the Series X Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series X Preferred Stock without the consent of the holders of the Series X Preferred Stock.

Dividends. Holders of the Series X Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share of Series X Preferred Stock, payable (a) for the "fixed rate period", semiannually in arrears on each March 5 and September 5, and (b) for the "floating rate period", quarterly in arrears on each March 5, June 5, September 5 and December 5, beginning December 5, 2024, in each case to record holders as of the fifteenth day of the calendar month immediately preceding the month in which the dividend payment date falls (or such date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series X Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 6.250%, for each dividend period from the issue date to, but excluding, September 5, 2024 (the "fixed rate period"), and (2) thereafter, at a floating rate equal to three-month LIBOR plus a spread of 3.705%, for each dividend period from, and including, September 5, 2024 (the "floating rate period"). The amount of dividends shall be computed (i) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend

payment date is not a business day (as defined in the certificate of designations for the Series X Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless, for the fixed rate period, that day falls in the next calendar year or, for the floating rate period, that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding business day), (i) on or prior to September 5, 2024, without any interest or other payment in respect of such delay, and (ii) after September 5, 2024, with dividends accruing to the actual payment date.

As long as shares of Series X Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series X Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series X Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series X Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series X Preferred Stock for any period unless full dividends on all outstanding shares of Series X Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declare dividends on the Series X Preferred Stock and on any capital stock ranking equally with the Series X Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series X Preferred Stock and the holders of any capital stock ranking equally with the Series X Preferred Stock.

Voting Rights. Holders of Series X Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series X Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series X Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, as applicable, whether or not for consecutive dividend periods, the holders of the Series X Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series X Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series X Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series X Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series X Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series X Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series X Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series X Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series X Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series X Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the

Series X Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series X Preferred Stock and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series X Preferred Stock, in whole or in part, at its option, at any time on or after September 5, 2024, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period, to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series X Preferred Stock, the Company may redeem the Series X Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series X Preferred Stock do not have any optional redemption rights.

Series Z Preferred Stock

Preferential Rights. The Series Z Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series Z Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series Z Preferred Stock do not have any preemptive rights, and the Series Z Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series Z Preferred Stock without the consent of the holders of the Series Z Preferred Stock.

Dividends. Holders of the Series Z Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share, payable (a) for the "fixed rate period", semiannually in arrears on each April 23 and October 23, and (b) for the "floating rate period", quarterly in arrears on each January 23, April 23, July 23 and October 23, beginning on January 23, 2025, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series Z Preferred Stock will accrue on the on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 6.500%, for each dividend period from the issue date to, but excluding, October 23, 2024 (the "fixed rate period"), and (2) thereafter, at a floating rate equal to three-month LIBOR plus a spread of 4.174%, for each dividend period from, and including, October 23, 2024 (the "floating rate period"). The amount of dividends shall be computed (i) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series Z Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless, for the fixed rate period, that day falls in the next calendar year or, for the floating rate period, that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding business day), (i) on or prior to October 23,

2024, without any interest or other payment in respect of such delay, and (ii) after October 23, 2024, with dividends accruing to the actual payment date.

As long as shares of Series Z Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series Z Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series Z Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series Z Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series Z Preferred Stock for any period unless full dividends on all outstanding shares of Series Z Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series Z Preferred Stock and on any capital stock ranking equally with the Series Z Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series Z Preferred Stock and the holders of any capital stock ranking equally with the Series Z Preferred Stock.

Voting Rights. Holders of Series Z Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series Z Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series Z Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, as applicable, whether or not for consecutive dividend periods, the holders of the Series Z Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series Z Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series Z Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series Z Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series Z Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series Z Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series Z Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series Z Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series Z Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series Z Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series Z Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series Z Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series Z Preferred Stock, in whole or in part, at its option, at any time on or after October 23, 2024, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends, for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series Z Preferred Stock, the Company may redeem the Series Z Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series Z Preferred Stock do not have any optional redemption rights.

Series AA Preferred Stock

Preferential Rights. The Series AA Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock Series, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series AA Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series AA Preferred Stock do not have any preemptive rights, and the Series AA Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series AA Preferred Stock without the consent of the holders of the Series AA Preferred Stock.

Dividends. Holders of the Series AA Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share of Series AA Preferred Stock, payable (a) for the "fixed rate period", semiannually in arrears on each March 17 and September 17, and (b) for the "floating rate period", quarterly in arrears on each March 17, June 17, September 17 and December 17, beginning on June 17, 2025, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series AA Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 6.100%, for each dividend period from the issue date to, but excluding, March 17, 2025 (the "fixed rate period"), and (2) thereafter, at a floating rate equal to three-month LIBOR plus a spread of 3.898%, for each dividend period from, and including, March 17, 2025 (the "floating rate period"). The amount of dividends shall be computed (i) during the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) during the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series AA Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless, for the fixed rate period, that day falls in the next calendar year or, for the floating rate period, that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding business day), (i) on or prior to March 17, 2025, without any interest or other payment in respect of such delay, and (ii) after March 17, 2025, with dividends accruing to the actual payment date.

As long as shares of Series AA Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise

acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series AA Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series AA Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series AA Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series AA Preferred Stock for any period unless full dividends on all outstanding shares of Series AA Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series AA Preferred Stock and on any capital stock ranking equally with the Series AA Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series AA Preferred Stock and the holders of any capital stock ranking equally with the Series AA Preferred Stock.

Voting Rights. Holders of Series AA Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series AA Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series AA Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, as applicable, whether or not for consecutive dividend periods, the holders of the Series AA Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series AA Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series AA Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series AA Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series AA Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series AA Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series AA Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series AA Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series AA Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series AA Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series AA Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series AA Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series AA Preferred Stock, in whole or in part, at its option, at any time on or after March 17, 2025, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends, for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In

addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series AA Preferred Stock, the Company may redeem the Series AA Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series AA Preferred Stock do not have any optional redemption rights.

Series DD Preferred Stock

Preferential Rights. The Series DD Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series DD Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series DD Preferred Stock do not have any preemptive rights, and the Series DD Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series DD Preferred Stock without the consent of the holders of the Series DD Preferred Stock.

Dividends. Holders of the Series DD Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share of Series DD Preferred Stock, payable (a) for the "fixed rate period", semiannually in arrears on each March 10 and September 10, and (b) for the "floating rate period", quarterly in arrears on each March 10, June 10, September 10 and December 10, beginning on June 10, 2026, in each case to record holders as of the fifteenth day of the calendar month preceding the month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series DD Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 6.300%, for each dividend period from the issue date to, but excluding, March 10, 2026 (the "fixed rate period"), and (2) thereafter, at a floating rate equal to three-month LIBOR plus a spread of 4.553%, for each dividend period from, and including, March 10, 2026 (the "floating rate period"). The amount of dividends shall be computed (i) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series DD Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless, for the fixed rate period, that day falls in the next calendar year or, for the floating rate period, that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding business day), (i) on or prior to March 10, 2026, without any interest or other payment in respect of such delay, and (ii) after March 10, 2026, with dividends accruing to the actual payment date.

As long as shares of Series DD Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series DD Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series DD Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series DD

Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series DD Preferred Stock for any period unless full dividends on all outstanding shares of Series DD Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series DD Preferred Stock and on any capital stock ranking equally with the Series DD Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series DD Preferred Stock and the holders of any capital stock ranking equally with the Series DD Preferred Stock.

Voting Rights. Holders of Series DD Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series DD Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series DD Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, as applicable, whether or not for consecutive dividend periods, the holders of the Series DD Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series DD Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series DD Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series DD Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series DD Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series DD Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series DD Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series DD Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series DD Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series DD Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series DD Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series DD Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series DD Preferred Stock, in whole or in part, at its option, at any time on or after March 10, 2026, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends, for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series DD Preferred Stock, the Company may redeem the Series DD Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but

excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series DD Preferred Stock do not have any optional redemption rights.

Series FF Preferred Stock

Preferential Rights. The Series FF Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series FF Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series FF Preferred Stock do not have any preemptive rights, and the Series FF Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series FF Preferred Stock without the consent of the holders of the Series FF Preferred Stock.

Dividends. Holders of the Series FF Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share of Series FF Preferred Stock, payable (a) for the "fixed rate period", semiannually in arrears on each March 15 and September 15, and (b) for the "floating rate period", quarterly in arrears on each March 15, June 15, September 15 and December 15, beginning on June 15, 2028, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series FF Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 5.875%, for each dividend period from the issue date to, but excluding, March 15, 2028 (the "fixed rate period"), and (2) thereafter, at a floating rate equal to three-month LIBOR plus a spread of 2.931%, for each dividend period from and including March 15, 2028 (the "floating rate period"). The amount of dividends shall be computed (i) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series FF Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless, for the fixed rate period, that day falls in the next calendar year or, for the floating rate period, that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding business day), (i) on or prior to March 15, 2028, without any interest or other payment in respect of such delay, and (ii) after March 15, 2028, with dividends accruing to the actual payment date.

As long as shares of Series FF Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series FF Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series FF Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series FF Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series FF Preferred Stock for any period unless full dividends on all outstanding shares of Series FF Preferred Stock for the immediately

preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series FF Preferred Stock and on any capital stock ranking equally with the Series FF Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series FF Preferred Stock and the holders of any capital stock ranking equally with the Series FF Preferred Stock.

Voting Rights. Holders of Series FF Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series FF Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series FF Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, as applicable, whether or not for consecutive dividend periods, the holders of the Series FF Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series FF Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series FF Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series FF Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series FF Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series FF Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series FF Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series FF Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series FF Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series FF Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series FF Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series FF Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series FF Preferred Stock, in whole or in part, at its option, at any time on or after March 15, 2028, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends, for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series FF Preferred Stock, the Company may redeem the Series FF Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series FF Preferred Stock do not have any optional redemption rights.

Series GG Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series GG Preferred Stock are listed on the NYSE under the symbol "BAC PrB". See "Description of Depositary Shares" below.

Preferential Rights. The Series GG Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series GG Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series GG Preferred Stock do not have any preemptive rights, and the Series GG Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series GG Preferred Stock without the consent of the holders of the Series GG Preferred Stock.

Dividends. Holders of the Series GG Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 6.000% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each February 16, May 16, August 16 and November 16, to record holders as of the first day of the calendar month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series GG Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day, without any interest or other payment in respect of such delay.

As long as shares of Series GG Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series GG Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series GG Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series GG Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series GG Preferred Stock for any period unless full dividends on all outstanding shares of Series GG Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declare dividends on the Series GG Preferred Stock and on any capital stock ranking equally with the Series GG Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series GG Preferred Stock and the holders of any capital stock ranking equally with the Series GG Preferred Stock.

Voting Rights. Holders of Series GG Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series GG Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series GG Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable,

have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series GG Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series GG Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series GG Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series GG Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series GG Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series GG Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series GG Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series GG Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series GG Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series GG Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series GG Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series GG Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series GG Preferred Stock, in whole or in part, at its option, at any time on or after May 16, 2023, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends, for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series GG Preferred Stock, the Company may redeem the Series GG Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series GG Preferred Stock do not have any optional redemption rights.

Series HH Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series HH Preferred Stock are listed on the NYSE under the symbol "BAC PrK". See "Description of Depositary Shares" below.

Preferential Rights. The Series HH Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred

Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series HH Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series HH Preferred Stock do not have any preemptive rights, and the Series HH Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series HH Preferred Stock without the consent of the holders of the Series HH Preferred Stock.

Dividends. Holders of the Series HH Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 5.875% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each January 24, April 24, July 45 and October 24, to record holders as of the first day of the calendar month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series HH Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day, without any interest or other payment in respect of such delay.

As long as shares of Series HH Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series HH Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series HH Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series HH Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series HH Preferred Stock for any period unless full dividends on all outstanding shares of Series HH Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series HH Preferred Stock and on any capital stock ranking equally with the Series HH Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series HH Preferred Stock and the holders of any capital stock ranking equally with the Series HH Preferred Stock.

Voting Rights. Holders of Series HH Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series HH Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series HH Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series HH Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series HH Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series HH Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series HH Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any

capital stock ranking senior to the Series HH Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series HH Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series HH Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series HH Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series HH Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series HH Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series HH Preferred Stock and subject to the right of holders of securities ranking senior to or on a parity with the Series HH Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series HH Preferred Stock, in whole or in part, at its option, at any time on or after July 24, 2023, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series HH Preferred Stock, the Company may redeem the Series HH Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series HH Preferred Stock do not have any optional redemption rights.

Series JJ Preferred Stock

Preferential Rights. The Series JJ Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series JJ Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series JJ Preferred Stock do not have any preemptive rights, and the Series JJ Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series JJ Preferred Stock without the consent of the holders of the Series JJ Preferred Stock.

Dividends. Holders of the Series JJ Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $25,000 per share of Series JJ Preferred Stock, payable (a) for the "fixed rate period", semi-annually in arrears on each June 20 and December 20, and (b) for the "floating rate period", quarterly in arrears on each March 20, June 20, September 20 and December 20, beginning on September 20, 2024, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board

committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series JJ Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 5.125%, for each dividend period from the issue date to, but excluding, June 20, 2024 (the "fixed rate period") and (2) thereafter, at a floating rate equal to three-month LIBOR (which rate is subject to replacement upon the occurrence of a "Benchmark Transition Event" and its related "Benchmark Replacement Date", as described in the certificate of designations for the Series JJ Preferred Stock) plus a spread of 3.292%, for each dividend period from, and including, June 20, 2024 (the "floating rate period"). The amount of dividends shall be computed (i) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date for the fixed rate period is not a business day (as defined in the certificate of designations for the Series JJ Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year, in which case payment will occur on the immediately preceding business day, in each case without additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted. If any dividend payment date for the floating rate period is not a business day, then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar month, in which case the immediately preceding business day will be the dividend payment date for that dividend period, in each case with dividends accruing to, but excluding, the actual payment date, and the dividend period will be adjusted.

As long as shares of Series JJ Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of the Common Stock or other capital stock ranking junior to the Series JJ Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series JJ Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series JJ Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series JJ Preferred Stock for any period unless full dividends on all outstanding shares of Series JJ Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series JJ Preferred Stock and on any capital stock ranking equally with the Series JJ Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series JJ Preferred Stock and the holders of any capital stock ranking equally with the Series JJ Preferred Stock.

Voting Rights. Holders of Series JJ Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series JJ Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series JJ Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or for six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series JJ Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series JJ Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series JJ Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series JJ Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series JJ Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series JJ Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series JJ Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series JJ Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series JJ Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series JJ Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series JJ Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series JJ Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series JJ Preferred Stock, in whole or in part, at its option, at any time on or after June 20, 2024, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series JJ Preferred Stock, the Company may redeem the Series JJ Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series JJ Preferred Stock do not have any optional redemption rights.

Series KK Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series KK Preferred Stock are listed on the NYSE under the symbol "BAC PrM". See "Description of Depositary Shares" below.

Preferential Rights. The Series KK Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series KK Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series KK Preferred Stock do not have any preemptive rights, and the Series KK Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series KK Preferred Stock without the consent of the holders of the Series KK Preferred Stock.

Dividends. Holders of the Series KK Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 5.375% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each March 25, June 25, September 25 and December 25, to record holders as of the first day of the calendar month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series KK Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day), in each case without any additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series KK Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series KK Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series KK Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series KK Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series KK Preferred Stock for any period unless full dividends on all outstanding shares of Series KK Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series KK Preferred Stock and on any capital stock ranking equally with the Series KK Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series KK Preferred Stock and the holders of any capital stock ranking equally with the Series KK Preferred Stock.

Voting Rights. Holders of Series KK Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series KK Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series KK Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph are conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series KK Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series KK Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series KK Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series KK Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series KK Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series KK Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series KK Preferred Stock shall be necessary to

amend, alter or repeal any provision of the certificate of designations for the Series KK Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series KK Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series KK Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series KK Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series KK Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series KK Preferred Stock, in whole or in part, at its option, at any time on or after June 25, 2024, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series KK Preferred Stock, the Company may redeem the Series KK Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series KK Preferred Stock do not have any optional redemption rights.

Series LL Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series LL Preferred Stock are listed on the NYSE under the symbol "BAC PrN". See "Description of Depositary Shares" below.

Preferential Rights. The Series LL Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series LL Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series LL Preferred Stock do not have any preemptive rights, and the Series LL Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series LL Preferred Stock without the consent of the holders of the Series LL Preferred Stock.

Dividends. Holders of the Series LL Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 5.000% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each March 17, June 17, September 17 and December 17, to record holders as of the first day of the calendar month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series LL Preferred Stock), then that

dividend payment will be made on the next succeeding day that is a business day (unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day), in each case without any additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series LL Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series LL Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series LL Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series LL Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series LL Preferred Stock for any period unless full dividends on all outstanding shares of Series LL Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series LL Preferred Stock and on any capital stock ranking equally with the Series LL Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series LL Preferred Stock and the holders of any capital stock ranking equally with the Series LL Preferred Stock.

Voting Rights. Holders of Series LL Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series LL Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series LL Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series LL Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series LL Preferred Stock and any such other series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series LL Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series LL Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series LL Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series LL Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series LL Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series LL Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series LL Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series LL Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series LL Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series LL Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation

preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series LL Preferred Stock, in whole or in part, at its option, at any time on or after September 17, 2024, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series LL Preferred Stock, the Company may redeem the Series LL Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series LL Preferred Stock do not have any optional redemption rights.

Series MM Preferred Stock

Preferential Rights. The Series MM Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series MM Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series MM Preferred Stock do not have any preemptive rights, and the Series MM Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series MM Preferred Stock without the consent of the holders of the Series MM Preferred Stock.

Dividends. Holders of Series MM Preferred Stock shall be entitled to receive non-cumulative cash dividends, when, as and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, based on the liquidation preference of $25,000 per share of Series MM Preferred Stock, payable (a) for the "fixed rate period", semi-annually in arrears on each January 28 and July 28, and (b) for the "floating rate period", quarterly in arrears on each January 28, April 28, July 28 and October 28, beginning on April 28, 2025, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series MM Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 4.300%, for each dividend period from the issue date to, but excluding, January 28, 2025 (the "fixed rate period") and (2) thereafter, at a floating rate equal to three-month LIBOR (which rate is subject to replacement upon the occurrence of a "Benchmark Transition Event" and its related "Benchmark Replacement Date", as described in the certificate of designations for the Series MM Preferred Stock) plus a spread of 2.664%, for each dividend period from, and including, January 28, 2025 (the "floating rate period"). The amount of dividends shall be computed (i) for the fixed rate period, on the basis of a 360-day year of twelve 30-day months, and (ii) for the floating rate period, on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date for the fixed rate period is not a business day (as defined in the certificate of designations for the Series MM Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year, in which case payment will occur on the immediately preceding business day, in each case without additional dividends accruing or other payment adjustment and the relevant dividend period will

not be adjusted. If any dividend payment date for the floating rate period is not a business day, then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar month, in which case the immediately preceding business day will be the dividend payment date for that dividend period, in each case, with dividends accruing to, but excluding, the actual payment date, and the dividend period will be adjusted accordingly.

As long as shares of Series MM Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series MM Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series MM Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series MM Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series MM Preferred Stock for any period unless full dividends on all outstanding shares of Series MM Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series MM Preferred Stock and on any capital stock ranking equally with the Series MM Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series MM Preferred Stock and the holders of any capital stock ranking equally with the Series MM Preferred Stock.

Voting Rights. Holders of Series MM Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series MM Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series MM Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least three or more semi-annual or six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series MM Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series MM Preferred Stock and any other such series of preferred stock for the equivalent of at least two semi-annual or four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series MM Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series MM Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series MM Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series MM Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series MM Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series MM Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series MM Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series MM Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series MM Preferred Stock and subject to the rights of holders of securities ranking senior to or

on a parity with the Series MM Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series MM Preferred Stock, in whole or in part, at its option, at any time on or after January 28, 2025, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series MM Preferred Stock, the Company may redeem the Series MM Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series MM Preferred Stock do not have any optional redemption rights.

Series NN Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series NN Preferred Stock are listed on the NYSE under the symbol "BAC PrO". See "Description of Depositary Shares" below.

Preferential Rights. The Series NN Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series NN Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series NN Preferred Stock do not have any preemptive rights, and the Series NN Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series NN Preferred Stock without the consent of the holders of the Series NN Preferred Stock.

Dividends. Holders of the Series NN Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 4.375% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each February 3, May 3, August 3, and November 3, to record holders as of the fifteenth day of the calendar month preceding the month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series NN Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day), in each case without any additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series NN Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series NN Preferred Stock, or generally repurchase, redeem or otherwise acquire for

consideration any capital stock ranking equally with the Series NN Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series NN Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series NN Preferred Stock for any period unless full dividends on all outstanding shares of Series NN Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series NN Preferred Stock and on any capital stock ranking equally with the Series NN Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series NN Preferred Stock and the holders of any capital stock ranking equally with the Series NN Preferred Stock.

Voting Rights. Holders of Series NN Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series NN Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series NN Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series NN Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series NN Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series NN Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series NN Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series NN Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series NN Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series NN Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series NN Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series NN Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series NN Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series NN Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series NN Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series NN Preferred Stock, in whole or in part, at its option, at any time on or after November 3, 2025, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series NN Preferred Stock, the Company may redeem the

Series NN Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series NN Preferred Stock do not have any optional redemption rights.

Series PP Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series PP Preferred Stock are listed on the NYSE under the symbol "BAC PrP". See "Description of Depositary Shares" below.

Preferential Rights. The Series PP Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series PP Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series PP Preferred Stock do not have any preemptive rights, and the Series PP Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series PP Preferred Stock without the consent of the holders of the Series PP Preferred Stock.

Dividends. Holders of the Series PP Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 4.125% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each February 2, May 2, August 2, and November 2, to record holders as of the fifteenth day of the calendar month preceding the month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series PP Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day), in each case without any additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series PP Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series PP Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series PP Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series PP Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series PP Preferred Stock for any period unless full dividends on all outstanding shares of Series PP Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series PP Preferred Stock and on any capital stock ranking equally with the Series PP Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro

rata basis among the holders of the shares of Series PP Preferred Stock and the holders of any capital stock ranking equally with the Series PP Preferred Stock.

Voting Rights. Holders of Series PP Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series PP Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series PP Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series PP Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series PP Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series PP Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series PP Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series PP Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series PP Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series PP Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series PP Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series PP Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series PP Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series PP Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series PP Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series PP Preferred Stock, in whole or in part, at its option, at any time on or after February 2, 2026, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series PP Preferred Stock, the Company may redeem the Series PP Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series PP Preferred Stock do not have any optional redemption rights.

Series QQ Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series QQ Preferred Stock are listed on the NYSE under the symbol "BAC PrQ". See "Description of Depositary Shares" below.

Preferential Rights. The Series QQ Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series QQ Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series QQ Preferred Stock do not have any preemptive rights, and the Series QQ Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series QQ Preferred Stock without the consent of the holders of the Series QQ Preferred Stock.

Dividends. Holders of the Series QQ Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 4.250% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each February 17, May 17, August 17, and November 17, to record holders as of the first day of the calendar month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series QQ Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day), in each case without any additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series QQ Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series QQ Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series QQ Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series QQ Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series QQ Preferred Stock for any period unless full dividends on all outstanding shares of Series QQ Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series QQ Preferred Stock and on any capital stock ranking equally with the Series QQ Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series QQ Preferred Stock and the holders of any capital stock ranking equally with the Series QQ Preferred Stock.

Voting Rights. Holders of Series QQ Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series QQ Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series QQ Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend

periods, the holders of the Series QQ Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series QQ Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series QQ Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series QQ Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series QQ Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series QQ Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series QQ Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series QQ Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series QQ Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series QQ Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series QQ Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series QQ Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series QQ Preferred Stock, in whole or in part, at its option, at any time on or after November 17, 2026, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series QQ Preferred Stock, the Company may redeem the Series QQ Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series QQ Preferred Stock do not have any optional redemption rights.

Series RR Preferred Stock

Preferential Rights. The Series RR Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series RR Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series RR Preferred Stock do not have any preemptive rights, and the Series RR Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series RR Preferred Stock without the consent of the holders of the Series RR Preferred Stock.

Dividends. Holders of Series RR Preferred Stock shall be entitled to receive non-cumulative cash dividends, when, as and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, based on the liquidation preference of $25,000 per share of Series RR Preferred Stock, payable quarterly in arrears, on each January 27, April 27, July 27 and October 27, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series RR Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 4.375%, for each dividend period from the issue date to, but excluding, January 27, 2027, and (2) from, and including, April 27, 2027, during each "reset period" (as defined in the certificate of designations for the Series RR Preferred Stock) at a rate per annum equal to the "Five-Year U.S. Treasury Rate" (as described in the certificate of designations for the Series RR Preferred Stock) as of the most recent "dividend determination date" (as defined in the certificate of designations for the Series RR Preferred Stock), plus a spread of 2.76% per annum. The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series RR Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year, in which case payment will occur on the immediately preceding business day, in each case without additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series RR Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series RR Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series RR Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series RR Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series RR Preferred Stock for any period unless full dividends on all outstanding shares of Series RR Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series RR Preferred Stock and on any capital stock ranking equally with the Series RR Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend

payments on a pro rata basis among the holders of the shares of Series RR Preferred Stock and the holders of any capital stock ranking equally with the Series RR Preferred Stock.

Voting Rights. Holders of Series RR Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series RR Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series RR Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series RR Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series RR Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series RR Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series RR Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series RR Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series RR Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series RR Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series RR Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series RR Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series RR Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series RR Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series RR Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends for the then-current dividend period, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series RR Preferred Stock, in whole or in part, at its option, at any time on or after January 27, 2027, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series RR Preferred Stock, the Company may redeem the Series RR Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series RR Preferred Stock do not have any optional redemption rights.

Series SS Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series SS Preferred Stock are listed on the NYSE under the symbol "BAC PrS". See "Description of Depositary Shares" below.

Preferential Rights. The Series SS Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series SS Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series SS Preferred Stock do not have any preemptive rights, and the Series SS Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series SS Preferred Stock without the consent of the holders of the Series SS Preferred Stock.

Dividends. Holders of the Series SS Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, at an annual dividend rate per share of 4.750% on the liquidation preference of $25,000 per share, payable quarterly in arrears on each February 17, May 17, August 17, and November 17, to record holders as of the first day of the calendar month in which the dividend payment date falls (or such other record date fixed by the Board or a duly authorized Board committee that is not more than 60 days prior to the dividend payment date). The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series SS Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day (unless that day falls in the next calendar year in which case payment will occur on the immediately preceding business day), in each case without any additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series SS Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series SS Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series SS Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series SS Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series SS Preferred Stock for any period unless full dividends on all outstanding shares of Series SS Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series SS Preferred Stock and on any capital stock ranking equally with the Series SS Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series SS Preferred Stock and the holders of any capital stock ranking equally with the Series SS Preferred Stock.

Voting Rights. Holders of Series SS Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series SS Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series SS Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend

periods, the holders of the Series SS Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series SS Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series SS Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series SS Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series SS Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series SS Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series SS Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series SS Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series SS Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series SS Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series SS Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series SS Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series SS Preferred Stock, in whole or in part, at its option, at any time on or after February 17, 2027, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series SS Preferred Stock, the Company may redeem the Series SS Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series SS Preferred Stock do not have any optional redemption rights.

Series TT Preferred Stock

Preferential Rights. The Series TT Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Series TT Preferred Stock is not convertible into or exchangeable for any shares of its Common Stock or any other class of its capital stock. Holders of the Series TT Preferred Stock do not have any preemptive rights, and the Series TT Preferred Stock is not subject to the operation of any sinking fund. The Company

may issue stock with preferences equal to the Series TT Preferred Stock without the consent of the holders of the Series TT Preferred Stock.

Dividends. Holders of Series TT Preferred Stock shall be entitled to receive non-cumulative cash dividends, when, as and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, based on the liquidation preference of $25,000 per share of Series TT Preferred Stock, payable quarterly in arrears, on each January 27, April 27, July 27 and October 27, in each case to record holders as of the first day of the calendar month in which the dividend payment date falls (or such record date fixed by the Board or a duly authorized Board committee that is not more than 60 days nor less than 10 days before the dividend payment date). Dividends on each share of Series TT Preferred Stock will accrue on the liquidation preference of $25,000 per share at a rate per annum equal to (1) 6.125%, for each dividend period from the issue date to, but excluding, April 27, 2027, and (2) from, and including, April 27, 2027, during each "reset period" (as defined in the certificate of designations for the Series TT Preferred Stock) at a rate per annum equal to the "Five-Year U.S. Treasury Rate" (as described in the certificate of designations for the Series TT Preferred Stock) as of the most recent "dividend determination date" (as defined in the certificate of designations for the Series TT Preferred Stock), plus a spread of 3.231% per annum. The amount of dividends shall be computed on the basis of a 360-day year of twelve 30-day months. If any dividend payment date is not a business day (as defined in the certificate of designations for the Series TT Preferred Stock), then that dividend payment will be made on the next succeeding day that is a business day, unless that day falls in the next calendar year, in which case payment will occur on the immediately preceding business day, in each case without additional dividends accruing or other payment adjustment and the relevant dividend period will not be adjusted.

As long as shares of Series TT Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or generally repurchase, redeem or otherwise acquire for consideration any shares of its Common Stock or other capital stock ranking junior to the Series TT Preferred Stock, or generally repurchase, redeem or otherwise acquire for consideration any capital stock ranking equally with the Series TT Preferred Stock other than on a pro rata basis, in each case unless full dividends on all outstanding shares of Series TT Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. The Company cannot declare or pay dividends on capital stock ranking equally with the Series TT Preferred Stock for any period unless full dividends on all outstanding shares of Series TT Preferred Stock for the immediately preceding dividend period have been paid in full or declared and a sum sufficient for the payment thereof is set aside. If the Company declares dividends on the Series TT Preferred Stock and on any capital stock ranking equally with the Series TT Preferred Stock but cannot make full payment of those declared dividends, the Company will allocate the dividend payments on a pro rata basis among the holders of the shares of Series TT Preferred Stock and the holders of any capital stock ranking equally with the Series TT Preferred Stock.

Voting Rights. Holders of Series TT Preferred Stock do not have voting rights, except as described herein and as specifically required by Delaware law. Whenever dividends payable on the Series TT Preferred Stock or any other series of the Company's preferred stock ranking equally with the Series TT Preferred Stock as to payment of dividends, and as to which voting rights equivalent to those described in this paragraph have been conferred and are exercisable, have not been declared and paid in an aggregate amount equal to, as to any series, the equivalent of at least six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series TT Preferred Stock will be entitled to vote as a class, together with the holders of all series of the Company's preferred stock having equivalent voting rights, for the election of two Preferred Stock Directors. When the Company has paid full dividends on the Series TT Preferred Stock and any other such series of preferred stock for the equivalent of at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series TT Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least 66 2/3% of the voting power of the Series TT Preferred Stock and any voting parity stock, voting as a class, shall be necessary to authorize, create or issue any capital stock ranking senior to the Series TT Preferred Stock as to dividends or the distribution of assets upon liquidation, dissolution or winding-up, or to reclassify any authorized capital stock into any such shares of such capital stock or issue any obligation or security convertible into or evidencing the right to purchase any such shares of capital stock. In addition, so long as any shares of the Series TT Preferred Stock remain outstanding, the affirmative vote of the holders of at least 66 2/3% of the voting power of the Series TT Preferred Stock shall be necessary to amend, alter or repeal any provision of the certificate of designations for the Series TT Preferred Stock or the Restated Certificate of Incorporation so as to adversely affect the powers, preferences or special rights of the Series TT Preferred Stock.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series TT Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series TT Preferred Stock and subject to the rights of holders of securities ranking senior to or on a parity with the Series TT Preferred Stock upon liquidation and the rights of the Company's depositors and other creditors, a liquidating distribution in the amount of the liquidation preference of $25,000 per share, plus any declared and unpaid dividends for the then-current dividend period, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series TT Preferred Stock, in whole or in part, at its option, at any time on or after April 27, 2027, at the redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. In addition, at any time within 90 days after a "capital treatment event," as described in the certificate of designations for the Series TT Preferred Stock, the Company may redeem the Series TT Preferred Stock, in whole but not in part, at a redemption price equal to $25,000 per share, plus any accrued and unpaid dividends for the then-current dividend period to, but excluding, the redemption date, without accumulation of any undeclared dividends. Holders of the Series TT Preferred Stock do not have any optional redemption rights.

Series 1 Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series 1 Preferred Stock are listed on the NYSE under the symbol "BML PrG". See "Description of Depositary Shares" below.

Preferential Rights. The Series 1 Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Shares of the Series 1 Preferred Stock are not convertible into or exchangeable for any shares of Common Stock or any other class of the Company's capital stock. Holders of the Series 1 Preferred Stock do not have any preemptive rights, and the Series 1 Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series 1 Preferred Stock without the consent of the holders of the Series 1 Preferred Stock.

Dividends. Holders of the Series 1 Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $30,000 per share at an annual floating rate per share equal to the greater of (a) three-month LIBOR, plus a spread of 0.75% and (b) 3.00%, payable quarterly, if declared, on each February 28, May 28, August 28 and November 28, to record holders as of the date fixed by the Board or a duly authorized Board committee that is a date not more than 30 nor less than 10 days preceding the applicable payment date. The amount of dividends payable for a period shorter than a full dividend period shall be computed on the basis of a 360-day year of twelve 30-day months and the actual number of days elapsed in any period of less than one month. If any dividend payment date is not a New York business day and a London business day (each as defined in the certificate of designations for the Series 1 Preferred Stock), then that dividend payment will be made on the next succeeding day that is both a New York business day and a London business day (unless that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding day that is both a New York business day and a London business day).

As long as shares of Series 1 Preferred Stock remain outstanding, generally the Company cannot declare or pay cash dividends or distributions on or redeem, purchase or acquire any shares of Common Stock or other capital stock ranking junior to the Series 1 Preferred Stock unless full dividends on all outstanding shares of Series 1 Preferred Stock have been declared, paid or set aside for payment for the immediately preceding dividend period. The Company cannot declare or pay dividends or distributions on or redeem, purchase or acquire any capital stock ranking equally with the Series 1 Preferred Stock for any period unless for such dividend period full dividends on all outstanding shares of Series 1 Preferred Stock for the immediately preceding dividend period have been declared, paid or set aside for payment. When dividends are not paid in full upon the shares of the Series 1 Preferred Stock and any capital stock ranking equally with the Series 1 Preferred Stock, all dividends declared upon shares of the Series 1 Preferred Stock and all shares of capital stock ranking equally with the Series 1 Preferred Stock shall be declared pro rata so that the amount of dividends declared per share on the Series 1 Preferred Stock and all such other of the Company's stock shall in all cases bear to each other the same ratio that accrued dividends per share on the shares of the Series 1 Preferred Stock and all such other stock bear to each other.

Voting Rights. Holders of Series 1 Preferred Stock do not have voting rights, except as provided herein and as specifically required by law. Holders of Series 1 Preferred Stock shall be entitled to vote on all matters submitted to a vote of the holders of Common Stock, voting together with the holders of Common Stock as one class, and each share of Series 1 Preferred Stock shall be entitled to 150 votes. If any quarterly dividend payable on the Series 1 Preferred Stock is in arrears for six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series 1 Preferred Stock will be entitled to vote as a class, together with the holders of all series of preferred stock ranking equally with the Series 1 Preferred Stock as to the payment of dividends and upon which voting rights equivalent to those granted to the holders of Series 1 Preferred Stock have been conferred and are exercisable, for the election of two Preferred Stock Directors; each share of Series 1 Preferred Stock shall be entitled to three votes for the election of such Preferred Stock Directors. When the Company has paid full dividends on the Series 1 Preferred Stock for at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series 1 Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least two-thirds of the shares of Series 1 Preferred Stock, outstanding at the time (voting as a class with all other series of preferred stock ranking equally with the Series 1 Preferred Stock) shall be necessary to permit, effect or validate (i) the authorization, creation, or issuance, or any increase in the authorized or issued amount, of any class or series of stock ranking prior to the Series 1 Preferred Stock or (ii) the amendment, alteration, or repeal,

whether by merger, consolidation, or otherwise, of any of the provisions of the Restated Certificate of Incorporation or of the resolutions set forth in a certificate of designations for the Series 1 Preferred Stock, which would adversely affect any right, preference, or privilege or voting power of the Series 1 Preferred Stock, or of the holders thereof.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series 1 Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of Bank of America capital stock ranking junior to the Series 1 Preferred Stock, a liquidating distribution in the amount of the liquidation preference of $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series 1 Preferred Stock, in whole or in part, at its option, at the redemption price equal to $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends. Holders of the Series 1 Preferred Stock do not have any optional redemption rights.

Series 2 Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series 2 Preferred Stock are listed on the NYSE under the symbol "BML PrH". See "Description of Depositary Shares" below.

Preferential Rights. The Series 2 Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 4 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Shares of the Series 2 Preferred Stock are not convertible into or exchangeable for any shares of Common Stock or any other class of the Company's capital stock. Holders of the Series 2 Preferred Stock do not have any preemptive rights, and the Series 2 Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series 2 Preferred Stock without the consent of the holders of the Series 2 Preferred Stock.

Dividends. Holders of the Series 2 Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee of the Board out of funds legally available for payment, on the liquidation preference of $30,000 per share at an annual floating rate per share equal to the greater of (a) three-month LIBOR, plus a spread of 0.65% and (b) 3.00%, payable quarterly in arrears, if declared, on each February 28, May 28, August 28 and November 28, to record holders as of the date fixed by the Board or a duly authorized Board committee that is a date not more than 30 nor less than 10 days preceding the applicable payment date. The amount of dividends payable shall be computed on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a New York business day and a London business day (each as defined in the certificate of designations for the Series 2 Preferred Stock), then that dividend payment will be made on the next succeeding day that is both a New York business day and a London business day (unless that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding day that is both a New York business day and a London business day).

As long as shares of Series 2 Preferred Stock remain outstanding, generally the Company cannot declare or pay cash dividends or distributions on or redeem, purchase or acquire any

shares of Common Stock or other capital stock ranking junior to the Series 2 Preferred Stock unless full dividends on all outstanding shares of Series 2 Preferred Stock have been declared, paid or set aside for payment for the immediately preceding dividend period. The Company cannot declare or pay dividends or distributions on or redeem, purchase or acquire capital stock ranking equally with the Series 2 Preferred Stock for any period unless for such dividend period full dividends on all outstanding shares of Series 2 Preferred Stock for the immediately preceding dividend period have been declared, paid or set aside for payment. When dividends are not paid in full upon the shares of the Series 2 Preferred Stock and any capital stock ranking equally with the Series 2 Preferred Stock, all dividends declared upon shares of the Series 2 Preferred Stock and all shares of capital stock ranking equally with the Series 2 Preferred Stock shall be declared pro rata so that the amount of dividends declared per share on the Series 2 Preferred Stock and all such other stock of the Company shall in all cases bear to each other the same ratio that accrued dividends per share on the shares of the Series 2 Preferred Stock and all such other stock bear to each other.

Voting Rights. Holders of Series 2 Preferred Stock do not have voting rights, except as provided herein and as specifically required by law. Holders of Series 2 Preferred Stock shall be entitled to vote on all matters submitted to a vote of the holders of Common Stock, voting together with the holders of Common Stock as one class, and each share of Series 2 Preferred Stock shall be entitled to 150 votes. If any quarterly dividend payable on the Series 2 Preferred Stock is in arrears for six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series 2 Preferred Stock will be entitled to vote as a class, together with the holders of all series of preferred stock ranking equally with the Series 2 Preferred Stock as to the payment of dividends and upon which voting rights equivalent to those granted to the holders of Series 2 Preferred Stock have been conferred and are exercisable, for the election of two Preferred Stock Directors; each share of Series 2 Preferred Stock shall be entitled to three votes for the election of such Preferred Stock Directors. When the Company has paid full dividends on the Series 2 Preferred Stock for at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series 2 Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least two-thirds of the shares of Series 2 Preferred Stock, outstanding at the time (voting as a class with all other series of preferred stock ranking equally with the Series 2 Preferred Stock), shall be necessary to permit, effect, or validate (i) the authorization, creation, or issuance, or any increase in the authorized or issued amount, of any class or series of stock ranking prior to the Series 2 Preferred Stock or (ii) the amendment, alteration, or repeal, whether by merger, consolidation, or otherwise, of any of the provisions of the Restated Certificate of Incorporation or of the resolutions set forth in a certificate of designations for the Series 2 Preferred Stock, which would adversely affect any right, preference, or privilege or voting power of the Series 2 Preferred Stock, or of the holders thereof.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series 2 Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series 2 Preferred Stock, a liquidating distribution in the amount of the liquidation preference of $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series 2 Preferred Stock, in whole or in part, at its option, at the redemption price equal to $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends. Holders of the Series 2 Preferred Stock do not have any optional redemption rights.

Series 4 Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series 4 Preferred Stock are listed on the NYSE under the symbol "BML PrJ". See "Description of Depositary Shares" below.

Preferential Rights. The Series 4 Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, and Series 5 Preferred Stock as to dividends and distributions on Bank of America's liquidation, dissolution, or winding up. Shares of the Series 4 Preferred Stock are not convertible into or exchangeable for any shares of Common Stock or any other class of the Company's capital stock. Holders of the Series 4 Preferred Stock do not have any preemptive rights, and the Series 4 Preferred Stock is not subject to the operation of any sinking fund. The Company may issue stock with preferences equal to the Series 4 Preferred Stock without the consent of the holders of the Series 4 Preferred Stock.

Dividends. Holders of the Series 4 Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee the Board out of funds legally available for payment, on the liquidation preference of $30,000 per share at an annual floating rate per share equal to the greater of (a) three-month LIBOR, plus a spread of 0.75% and (b) 4.00%, payable quarterly in arrears, if declared, on each February 28, May 28, August 28 and November 28, to record holders as of the date fixed by the Board or a duly authorized Board committee that is a date not more than 30 nor less than 10 days preceding the applicable payment date. The amount of dividends payable shall be computed on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a New York business day and a London business day (each as defined in the certificate of designations for the Series 4 Preferred Stock), then that dividend payment will be made on the next succeeding day that is both a New York business day and a London business day (unless that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding day that is both a New York business day and a London business day).

As long as shares of Series 4 Preferred Stock remain outstanding, generally the Company cannot declare or pay cash dividends or distributions on or redeem, purchase or acquire any shares of Common Stock or other capital stock ranking junior to the Series 4 Preferred Stock unless full dividends on all outstanding shares of Series 4 Preferred Stock have been declared, paid or set aside for payment for the immediately preceding dividend period. The Company cannot declare or pay dividends or distributions on or redeem, purchase or acquire capital stock ranking equally with the Series 4 Preferred Stock for any period unless for such dividend period full dividends on all outstanding shares of Series 4 Preferred Stock for the immediately preceding dividend period have been declared, paid or set aside for payment. When dividends are not paid in full upon the shares of the Series 4 Preferred Stock and any capital stock ranking equally with the Series 4 Preferred Stock, all dividends declared upon shares of the Series 4 Preferred Stock and all shares of capital stock ranking equally with the Series 4 Preferred Stock shall be declared pro rata so that the amount of dividends declared per share on the Series 4 Preferred Stock and all such other of the Company's stock shall in all cases bear to each other the same ratio that accrued dividends per share on the shares of the Series 4 Preferred Stock and all such other stock bear to each other.

Voting Rights. Holders of Series 4 Preferred Stock do not have voting rights, except as provided herein and as specifically required by law. Holders of Series 4 Preferred Stock shall be

entitled to vote on all matters submitted to a vote of the holders of Common Stock, voting together with the holders of Common Stock as one class, and each share of Series 4 Preferred Stock shall be entitled to 150 votes. If any quarterly dividend payable on the Series 4 Preferred Stock is in arrears for six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series 4 Preferred Stock will be entitled to vote as a class, together with the holders of all series of preferred stock ranking equally with the Series 4 Preferred Stock as to the payment of dividends and upon which voting rights equivalent to those granted to the holders of Series 4 Preferred Stock have been conferred and are exercisable, for the election of two Preferred Stock Directors; each share of Series 4 Preferred Stock shall be entitled to three votes for the election of such Preferred Stock Directors. When the Company has paid full dividends on the Series 4 Preferred Stock for at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series 4 Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least two-thirds of the shares of Series 4 Preferred Stock, outstanding at the time (voting as a class with all other series of preferred stock ranking equally with the Series 4 Preferred Stock), shall be necessary to permit, effect, or validate (i) the authorization, creation, or issuance, or any increase in the authorized or issued amount, of any class or series of stock ranking prior to the Series 4 Preferred Stock or (ii) the amendment, alteration, or repeal, whether by merger, consolidation, or otherwise, of any of the provisions of the Restated Certificate of Incorporation or of the resolutions set forth in a certificate of designations for the Series 4 Preferred Stock, which would adversely affect any right, preference, or privilege or voting power of the Series 4 Preferred Stock, or of the holders thereof.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series 4 Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of its capital stock ranking junior to the Series 4 Preferred Stock, a liquidating distribution in the amount of the liquidation preference of $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series 4 Preferred Stock, in whole or in part, at its option, at the redemption price equal to $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends. Holders of the Series 4 Preferred Stock do not have any optional redemption rights.

Series 5 Preferred Stock

Listing. Depositary shares representing fractional interests in a share of Series 5 Preferred Stock are listed on the NYSE under the symbol "BML PrL". See "Description of Depositary Shares" below.

Preferential Rights. The Series 5 Preferred Stock ranks senior to the Common Stock and equally with the Series B Preferred Stock, Series E Preferred Stock, Series F Preferred Stock, Series G Preferred Stock, Series L Preferred Stock, Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series JJ Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series MM Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series RR Preferred Stock, Series SS Preferred Stock, Series TT Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, and Series 4 Preferred Stock as to dividends and distributions on the Company's liquidation, dissolution, or winding up. Shares of the Series 5 Preferred Stock are not convertible into or exchangeable for any shares of Common Stock or any other class of the Company's capital stock. Holders of the Series 5 Preferred Stock do not have any preemptive rights, and the Series 5 Preferred Stock is not subject to the operation of any sinking fund. The Company may

issue stock with preferences equal to the Series 5 Preferred Stock without the consent of the holders of the Series 5 Preferred Stock.

Dividends. Holders of the Series 5 Preferred Stock are entitled to receive non-cumulative cash dividends, when, as, and if declared by the Board or a duly authorized committee the Board out of funds legally available for payment, on the liquidation preference of $30,000 per share at an annual floating rate per share equal to the greater of (a) three-month LIBOR, plus a spread of 0.50% and (b) 4.00%, payable quarterly in arrears, if declared, on each February 21, May 21, August 21 and November 21, to record holders as of the date fixed by the Board or a duly authorized Board committee that is a date not more than 30 nor less than 10 days preceding the applicable payment date. The amount of dividends payable shall be computed on the basis of a 360-day year and the actual number of days elapsed in the dividend period. If any dividend payment date is not a New York business day and a London business day (each as defined in the certificate of designations for the Series 5 Preferred Stock), then that dividend payment will be made on the next succeeding day that is both a New York business day and a London business day (unless that day falls in the next calendar month, in which each such case payment will occur on the immediately preceding day that is both a New York business day and a London business day).

As long as shares of Series 5 Preferred Stock remain outstanding, the Company cannot declare or pay cash dividends or distributions on or redeem, purchase or acquire any shares of Common Stock or other capital stock ranking junior to the Series 5 Preferred Stock unless full dividends on all outstanding shares of Series 5 Preferred Stock have been declared, paid or set aside for payment for the immediately preceding dividend period. The Company cannot declare or pay dividends or distributions on or redeem, purchase or acquire capital stock ranking equally with the Series 5 Preferred Stock for any period unless for such dividend period full dividends on all outstanding shares of Series 5 Preferred Stock for the immediately preceding dividend period have been declared, paid or set aside for payment. When dividends are not paid in full upon the shares of the Series 5 Preferred Stock and any capital stock ranking equally with the Series 5 Preferred Stock, all dividends declared upon shares of the Series 5 Preferred Stock and all shares of capital stock ranking equally with the Series 5 Preferred Stock shall be declared pro rata so that the amount of dividends declared per share on the Series 5 Preferred Stock, and all such other of the Company's stock shall in all cases bear to each other the same ratio that accrued dividends per share on the shares of the Series 5 Preferred Stock and all such other stock bear to each other.

Voting Rights. Holders of Series 5 Preferred Stock do not have voting rights, except as provided herein and as specifically required by law. Holders of Series 5 Preferred Stock shall be entitled to vote on all matters submitted to a vote of the holders of Common Stock, voting together with the holders of Common Stock as one class, and each share of Series 5 Preferred Stock shall be entitled to 150 votes. If any quarterly dividend payable on the Series 5 Preferred Stock is in arrears for six or more quarterly dividend periods, whether or not for consecutive dividend periods, the holders of the Series 5 Preferred Stock will be entitled to vote as a class, together with the holders of all series of preferred stock ranking equally with the Series 5 Preferred Stock as to the payment of dividends and upon which voting rights equivalent to those granted to the holders of Series 5 Preferred Stock have been conferred and are exercisable, for the election of two Preferred Stock Directors; each share of Series 5 Preferred Stock shall be entitled to three votes for the election of such Preferred Stock Directors. When the Company has paid full dividends on the Series 5 Preferred Stock for at least four quarterly dividend periods following a dividend arrearage described above, these voting rights will terminate.

As long as the Series 5 Preferred Stock remains outstanding, the affirmative vote or consent of the holders of at least two-thirds of the shares of Series 5 Preferred Stock, outstanding at the time (voting as a class with all other series of preferred stock ranking equally with the Series 5 Preferred Stock), shall be necessary to permit, effect, or validate (i) the authorization, creation, or issuance, or any increase in the authorized or issued amount, of any class or series of

stock ranking prior to the Series 5 Preferred Stock or (ii) the amendment, alteration, or repeal, whether by merger, consolidation, or otherwise, of any of the provisions of the Restated Certificate of Incorporation or of the resolutions set forth in a certificate of designations for the Series 5 Preferred Stock, which would adversely affect any right, preference, or privilege or voting power of the Series 5 Preferred Stock, or of the holders thereof.

Distributions. In the event of the Company's voluntary or involuntary liquidation, dissolution, or winding up, holders of Series 5 Preferred Stock will be entitled to receive out of assets legally available for distribution to stockholders, before any distribution or payment out of its assets may be made to or set aside for the holders of the Company's capital stock ranking junior to the Series 5 Preferred Stock, a liquidating distribution in the amount of the liquidation preference of $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends, to the date of liquidation.

Redemption. The Company may redeem the Series 5 Preferred Stock, in whole or in part, at its option, at the redemption price equal to $30,000 per share, plus any declared and unpaid dividends, without accumulation of any undeclared dividends. Holders of the Series 5 Preferred Stock do not have any optional redemption rights.

DESCRIPTION OF DEPOSITARY SHARES

Each outstanding share of the Series E Preferred Stock, Series GG Preferred Stock, Series HH Preferred Stock, Series KK Preferred Stock, Series LL Preferred Stock, Series NN Preferred Stock, Series PP Preferred Stock, Series QQ Preferred Stock, Series SS Preferred Stock, Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock and Series 5 Preferred Stock is represented by depositary shares that are registered under Section 12(b) of the Exchange Act and listed on the NYSE. In addition, each of the Series U Preferred Stock, Series X Preferred Stock, Series Z Preferred Stock, Series AA Preferred Stock, Series DD Preferred Stock, Series FF Preferred Stock, Series JJ Preferred Stock, Series MM Preferred Stock, Series RR Preferred Stock and Series TT Preferred Stock is represented by depositary shares that are not listed. This section describes the certain provisions of all of Company's depositary shares outstanding as of December 31, 2022.

General

The Company has deposited the shares of preferred stock of each series of preferred stock represented by depositary shares under respective deposit agreements: (a) in the case of all such series of preferred stock *other than* the Series 1 Preferred Stock, the Series 2 Preferred Stock, the Series 4 Preferred Stock and the Series 5 Preferred Stock (such series of preferred stock collectively referred to as "**Legacy Bank of America Preferred Stock**"), between the Company and each of Computershare Inc. and its wholly owned subsidiary Computershare Trust Company, N.A. (collectively acting as depository) and the holders from time to time of the depositary receipts issued thereunder and evidencing such depositary shares; and (b) in the case of the Series 1 Preferred Stock, Series 2 Preferred Stock, Series 4 Preferred Stock and Series 5 Preferred Stock (referred to collectively as the "**Legacy ML Preferred Stock**"), between the Company (as successor by merger to Merrill Lynch & Co., Inc.) and The Bank of New York Mellon (as successor to JPMorgan Chase Bank, N.A. or The Bank of New York, N.A., as applicable), acting as depository, and the holders from time to time of the depositary receipts issued thereunder and evidencing such depositary shares, as amended pursuant to the assignment, assumption and amendment agreement among the Company, Merrill Lynch & Co., Inc. and The Bank of New York Mellon. The respective deposit agreements are included as exhibits to the Company's Current Reports on Form 8-K filed with the Securities and Exchange Commission ("**SEC**") on November 6, 2006 (Series E Preferred Stock), May 29, 2013 (Series U Preferred Stock), September 5, 2014 (Series X Preferred Stock), October 23, 2014 (Series Z Preferred Stock), March 17, 2015 (Series AA Preferred Stock), March 10, 2016 (Series DD Preferred Stock), March 15, 2018 (Series FF Preferred Stock), June 20, 2019 (Series JJ Preferred Stock), January 24, 2020 (Series MM Preferred Stock), January 25, 2022 (Series RR Preferred Stock) and April 22, 2022 (Series TT Preferred Stock) or its Registration Statements on Form 8-A filed with the SEC on January 2, 2009 (Legacy ML Preferred Stock), May 16, 2018 (Series GG Preferred Stock), July 24, 2018 (Series HH Preferred Stock), June 25, 2019 (Series KK Preferred Stock), September 17, 2019 (Series LL Preferred Stock), October 29, 2020 (Series NN Preferred Stock), January 28, 2021 (Series PP Preferred Stock), October 26, 2021 (Series QQ Preferred Stock), and January 31, 2022 (Series SS Preferred Stock).

With respect to each series of Legacy Bank of America Preferred Stock represented by depositary shares listed on the NYSE (the "**Listed Legacy Bank of America Depositary Shares**"), each depositary share represents a $1/1{,}000^{th}$ interest in a share of the related series of preferred stock. With respect to each series of Legacy Bank of America Preferred Stock represented by depositary shares that are not listed (the "**Unlisted Legacy Bank of America Depositary Shares**"), each depositary share represents a $1/25^{th}$ interest in a share of the related series of preferred stock. With respect to each series of Legacy ML Preferred Stock, each depositary share represents a $1/1{,}200^{th}$ interest in a share of the related series of preferred stock. Subject to the terms of the respective deposit agreements, each holder of a depositary share is

entitled, in proportion to the fractional interest of a share of the series of preferred stock represented by the depositary share, to all the rights and preferences of the series of preferred stock being represented, including dividend, voting, redemption, conversion, and liquidation rights.

Withdrawal of Preferred Stock

Unless the depositary shares have been called for redemption, generally a holder of depositary shares may surrender his or her depositary receipts at the principal office of the depository, pay any charges, and comply with any other terms as provided in the related deposit agreement, and in exchange be entitled to delivery of the number of whole shares of preferred stock underlying the depositary shares. However, generally holders of whole shares of the relevant series of preferred stock are not entitled to deposit those shares under the applicable deposit agreement or to receive depositary receipts for those shares after the withdrawal. If the depositary shares surrendered by the holder in connection with the withdrawal exceed the number of depositary shares that represent the number of whole shares of preferred stock to be withdrawn, the depository will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares.

Dividends and Other Distributions

Each dividend on a Listed Legacy Bank of America Depositary Share will be in an amount equal to 1/1,000th of the dividend declared on a share of the relevant underlying series of preferred stock. Each dividend on an Unlisted Legacy Bank of America Depositary Share will be in an amount equal to 1/25th of the dividend declared on a share of the relevant underlying series of preferred stock. Each dividend on a Legacy ML Depositary Share will be in an amount equal to 1/1,200th of the dividend declared on a share of the relevant underlying series of preferred stock. In each case, the depository will distribute all cash dividends or other cash distributions received in respect of the relevant underlying series of preferred stock to the record holders of depositary shares relating to that preferred stock in proportion to the number of depositary shares owned by those holders. If there is a distribution other than in cash, the depository will distribute property received by it to the record holders of the depositary shares who are entitled to that property, in proportion to the number of depositary shares held by each holder. However, if the depository determines that it is not feasible to make this distribution of property, the depository, with the Company's approval, may sell that property and distribute the net proceeds to the holders of the depositary shares.

Generally, in the case of each series of Legacy Bank of America Preferred Stock, if the calculation of a dividend or other cash distribution results in an amount that is a fraction of a cent and that fraction is equal to or greater than $0.005, the depository will round that amount up to the next highest whole cent and will request that the Company pay the resulting additional amount to the depository for the relevant dividend or other cash distribution. If the fractional amount is less than $0.005, the depository will disregard that fractional amount.

In the case of each series of Legacy ML Preferred Stock, the depository will not distribute any fraction of a cent and will instead retain any balance not so distributed, which shall be held by the depository and treated as part of the next sum received by the depository for distribution the holders.

Record dates for the payment of dividends and other matters relating to depositary shares will be the same as the corresponding record dates for the related series of preferred stock.

The amount paid as dividends or otherwise distributable by the depository with respect to depositary shares or the relevant underlying series of preferred stock will be reduced by any amounts required to be withheld by the Company or the depository on account of taxes or other

governmental charges. The depository may refuse to make any payment or distribution, or to effect any transfer, exchange, or withdrawal of any depositary shares or the shares of the related series of preferred stock, until such taxes or other governmental charges are paid.

Redemption of Depositary Shares

If a series of preferred stock that relates to depositary shares is redeemed, the related depositary shares will be redeemed with the proceeds received by the depository from the redemption, in whole or in part, of that underlying series of preferred stock. Generally, the depository will mail notice of redemption at least 30 (5 in the case of each of the Series RR Preferred Stock and Series TT Preferred Stock, and 15 in the case of each of the Series 4 Preferred Stock and Series 5 Preferred Stock) and not more than 60 calendar days before the redemption date to the record holders of the depositary shares to be redeemed at their addresses appearing in the depository's books (unless the depositary shares are held through DTC in which case, for certain series, the notice will be in accordance with DTC's procedures). With respect to (i) the Listed Legacy Bank of America Depositary Shares, the redemption price per depositary share will be equal to 1/1,000th of the redemption price per share payable with respect to the relevant underlying series of preferred stock, (ii) the Unlisted Legacy Bank of America Depositary Shares, the redemption price per depositary share will be equal to 1/25th of the redemption price per share payable with respect to the relevant underlying series of preferred stock, and (iii) the Legacy ML Depositary Shares, the redemption price per depositary share will be equal to 1/1,200th of the redemption price per share payable with respect to the relevant underlying series of preferred stock.

Whenever the Company redeems shares of a series of preferred stock held by the depositary under a deposit agreement, the depositary will redeem as of the same redemption date the number of related depositary shares representing the shares of preferred stock that are redeemed. If less than all of the depositary shares are redeemed, the depositary shares to be redeemed generally will be selected by lot or pro rata.

After the date fixed for redemption, the depositary shares called for redemption will no longer be deemed to be outstanding. At that time, all rights of the holder of the depositary shares will cease, except the right to receive any money or other property they become entitled to receive upon surrender to the depository of the depositary receipts.

Voting the Deposited Preferred Stock

Holders of depositary receipts are entitled to a fraction of a vote per depositary share (1/1,000th in the case of the Listed Legacy Bank of America Depositary Shares, 1/25th in the case of the Unlisted Legacy Bank of America Depositary Shares, and 1/1,200th in the case of the Legacy ML Depositary Shares) under those limited circumstances in which holders of the relevant underlying series of preferred stock are entitled to a vote. When the depository receives notice of any meeting at which holders of a series of preferred stock held by the depository are entitled to vote, the depository will mail the information contained in the notice to the record holders of the related depositary shares. Each record holder of depositary shares on the record date, which will be the same date as the record date for the related series of preferred stock, will be entitled to instruct the depository as to the exercise of the voting rights pertaining to the amount of preferred stock underlying the holder's depositary shares. The depository will endeavor, insofar as practicable, to vote the amount of preferred stock underlying the depositary shares in accordance with these instructions. The Company will agree to take all action that may be deemed necessary by the depository to enable the depository to do so. The depository will not vote any shares of preferred stock except to the extent it receives specific instructions from the holders of depositary shares representing that number of shares of the related preferred stock (provided that with respect to the Series E Preferred Stock, the depository will vote the stock

represented by such depositary shares proportionately with votes cast pursuant to instructions received from the other holders).

Amendment and Termination of a Deposit Agreement

The form of depositary receipt evidencing depositary shares and any provision of the related deposit agreement may be amended by agreement between the Company and the depository. However, any amendment that materially and adversely alters the rights of the existing holders of depositary shares will not be effective unless the amendment has been approved by the record holders of at least a majority (or, with respect to the Legacy ML Depositary Shares, in the case of amendments relating to or affecting rights to receive dividends or distributions, or voting or redemption rights, two-thirds) of the depositary shares then outstanding. Either the Company or the depository may terminate a deposit agreement if all of the outstanding depositary shares have been redeemed or if there has been a final distribution in respect of the related preferred stock in connection with the Company's liquidation, dissolution, or winding up or, with respect to the Legacy ML Depositary Shares, upon the consent of holders of depositary receipts representing not less than two-thirds of the depositary shares then outstanding.

Charges of Depository

The Company will pay all transfer and other taxes, assessments and governmental charges arising solely from the existence of a depository arrangement. The Company will pay the fees of the depository in connection with the initial deposit of the underlying series of preferred stock and any redemption of such preferred stock. Holders of depositary receipts will pay transfer and other taxes, assessments and governmental charges and any other charges as are expressly provided in the related deposit agreement to be for their accounts. The depository may refuse to make any payment or distribution on, or effect any transfer of a depositary receipt or any withdrawals of preferred stock evidenced by, a depositary receipt until all taxes, assessments, and governmental charges with respect to the depositary receipt or preferred stock are paid by their holders.

Miscellaneous

The depository will forward to the record holders of depositary shares all of the Company's reports and communications that are delivered to the depository and which the Company is required to furnish to the holders of its preferred stock or depositary shares.

Neither the Company nor the depository will be liable if the Company is prevented or delayed by law or any circumstance beyond its control in performing its obligations under a deposit agreement. All of the Company's obligations as well as the depository's obligations under each deposit agreement are limited to performance of its respective duties set forth in the deposit agreement and neither the Company nor the depository will be obligated to prosecute or defend any legal proceeding relating to any depositary shares or preferred stock unless provided with satisfactory indemnity. The Company, and the depository, may rely on written advice of counsel or accountants, or information provided by persons presenting preferred stock for deposit, holders of depositary shares, or other persons believed to be competent and on documents believed to be genuine.

Resignation and Removal of Depository

The depository may resign at any time by delivering to the Company notice of its election to do so, and the Company may remove the depository at any time. Any resignation or removal will take effect only upon the appointment of a successor depository and the successor

depository's acceptance of the appointment. Any successor depository must be a U.S. bank or trust company.

DESCRIPTION OF FLOATING RATE PREFERRED HYBRID INCOME TERM SECURITIES OF BAC CAPITAL TRUST XIII (AND THE GUARANTEE OF THE REGISTRANT RELATED THERETO)

This section describes the Floating Rate Preferred Hybrid Income Term Securities of BAC Capital Trust XIII (the "**Trust XIII HITS**") and the Company's guarantee related thereto. The Trust XIII HITS are listed on the NYSE under the symbol "BAC/PF".

General

The Trust XIII HITS are a class of preferred beneficial interests in BAC Capital Trust XIII, a Delaware statutory trust ("**Trust XIII**"), and are issued pursuant to the Amended and Restated Declaration of Trust of BAC Capital Trust XIII (the "**Trust XIII Declaration of Trust**") dated as of February 16, 2007 among the Company, as sponsor, The Bank of New York Mellon (formerly known as The Bank of New York), as property trustee, BNY Mellon Trust of Delaware (formerly known as The Bank of New York (Delaware)), as Delaware trustee, the regular trustees named therein and the holders of the trust securities. The terms of the Trust XIII HITS include those stated in the Trust XIII Declaration of Trust, any amendments thereto, and those made a part of the Trust XIII Declaration of Trust by the Trust Indenture Act of 1939 (the "**Trust Indenture Act**") and the Delaware Statutory Trust Act. The Trust XIII Declaration of Trust is included as an exhibit to the Company's Current Report on Form 8-K filed with the SEC on February 16, 2007. As of December 31, 2022, 140,922 Trust XIII HITS (having an aggregate liquidation amount of approximately $140.9million) were outstanding.

The common securities of Trust XIII ("**Trust XIII Common Securities**") are held directly or indirectly by the Company. The Trust XIII Common Securities rank on a parity, and payments upon redemption, liquidation or otherwise will be made on a proportionate basis, with the Trust XIII HITS, except as set forth below in "—Ranking of Trust XIII Common Securities". The Trust XIII Declaration of Trust does not permit Trust XIII to issue any securities other than the Trust XIII Common Securities and the Trust XIII HITS or to incur any indebtedness.

The assets of Trust XIII consist of shares of the Company's Floating Rate Non-Cumulative Preferred Stock, Series F (the "**Series F Preferred Stock**"), which Trust XIII owns for the benefit of the holders of its Trust XIII HITS and Trust XIII Common Securities (together, the "**Trust XIII securities**"). Each Trust XIII HITS has a liquidation amount of $1,000 and represents a beneficial interest in Trust XIII that corresponds to $1/100^{th}$ of a share of Series F Preferred Stock. Because Trust XIII is a pass-through vehicle, Trust XIII will distribute to holders of the Trust XIII securities the dividends that it receives on the Series F Preferred Stock. For a description of the terms of the Series F Preferred Stock, see "Description of Preferred Stock – Series F Preferred Stock" above.

Trust XIII's business and affairs are conducted by its trustees, each appointed by the Company as sponsor of Trust XIII.

The Trust XIII HITS are issued in registered book-entry only form and are held in the name of The Depository Trust Company ("**DTC**") or its nominee.

Distributions

Trust XIII must make distributions on the Trust XIII HITS on relevant distribution dates to the extent that it has funds available therefor. The distribution dates for the Trust XIII HITS are March 15, June 15, September 15 and December 15 of each year. A distribution period is each period beginning on a distribution date and continuing to, but not including, the next succeeding distribution date. When a distribution date is not a business day (as defined in the Trust XIII Declaration of Trust), Trust XIII will make the distribution on the next business day

without interest. Distributions are calculated on the basis of a 360-day year and the number of days actually elapsed in a distribution period.

Holders of Trust XIII HITS will be entitled to receive distributions corresponding to dividends on the Series F Preferred Stock. These non-cumulative cash dividends will be payable in arrears if, as and when declared by the Board (or a committee of the Board) on the quarterly dividend payment dates, which are each March 15, June 15, September 15 and December 15 (or if such day is not a business day, the next business day). For additional information about dividends on the Series F Preferred Stock, see "Description of Preferred Stock – Series F Preferred Stock" above.

Trust XIII will make distributions on the Trust XIII HITS only to the extent it has received dividends on the Series F Preferred Stock.

Distributions on the Trust XIII HITS will be payable to the holders as they appear in the security register of Trust XIII on the relevant record dates. The record date will be the last day of the month immediately preceding the month in which the relevant distribution date falls.

Mandatory Redemption of Trust XIII HITS upon Redemption of Series F Preferred Stock

The Trust XIII HITS have no stated maturity but must be redeemed on the date the Company redeems the Series F Preferred Stock, and the property trustee or paying agent will apply the proceeds from such repayment or redemption to redeem a like amount, as defined below, of the Trust XIII HITS. The Series F Preferred Stock is perpetual but the Company generally may redeem it at any time. The redemption price per Trust XIII HITS will equal the liquidation amount per Trust XIII HITS plus accumulated and unpaid distributions to, but excluding, the redemption date.

If less than all of the shares of Series F Preferred Stock held by Trust XIII are to be redeemed on a redemption date, then the proceeds from such redemption will be allocated pro rata to the redemption of the Trust XIII HITS and the Trust XIII Common Securities, except as set forth below under "— Ranking of Trust XIII Common Securities."

The term "*like amount*" as used above means Trust XIII HITS having a liquidation amount equal to that portion of the liquidation amount of the Series F Preferred Stock to be contemporaneously redeemed, the proceeds of which will be used to pay the redemption price of such Trust XIII HITS.

Redemption Procedures. Notice of any redemption will be mailed at least 15 days but not more than 60 days before the redemption date to the registered address of each holder of Trust XIII HITS to be redeemed.

If (1) Trust XIII gives an irrevocable notice of redemption of Trust XIII HITS for cash and (2) the Company has paid to the property trustee a sufficient amount of cash in connection with the related redemption of the Series F Preferred Stock, then on the redemption date, the property trustee will irrevocably deposit with DTC funds sufficient to pay the redemption price for the Trust XIII HITS being redeemed. Trust XIII will also give DTC irrevocable instructions and authority to pay the redemption amount in immediately available funds to the beneficial owners of the Trust XIII HITS. Distributions to be paid on or before the redemption date for any Trust XIII HITS called for redemption will be payable to the holders as of the record dates for the related dates of distribution. If the Trust XIII HITS called for redemption are no longer in book-entry form, the property trustee, to the extent funds are available, will irrevocably deposit with the paying agent for the Trust XIII HITS funds sufficient to pay the applicable redemption price and will give such paying agent irrevocable instructions and authority to pay the

redemption price to the holders thereof upon surrender of their certificates evidencing the Trust XIII HITS.

If notice of redemption shall have been given and funds deposited as required, then upon the date of such deposit:

- all rights of the holders of such Trust XIII HITS called for redemption will cease, except the right of the holders of such Trust XIII HITS to receive the redemption price and any distribution payable in respect of the Trust XIII HITS on or prior to the redemption date, but without interest on such redemption price; and

- the Trust XIII HITS called for redemption will cease to be outstanding.

If any redemption date is not a business day, then the redemption amount will be payable on the next business day (and without any interest or other payment in respect of any such delay). However, if payment on the next business day causes payment of the redemption amount to be in the next calendar month, then payment will be on the preceding business day.

If payment of the redemption amount for any shares of Series F Preferred Stock called for redemption is improperly withheld or refused and accordingly the redemption amount of the Trust XIII HITS is not paid either by Trust XIII or by the Company under the Trust XIII Guarantee (as defined below), then dividends on the Series F Preferred Stock will continue to accrue and distributions on such Trust XIII HITS called for redemption will continue to accumulate at the applicable rate then borne by such Trust XIII HITS from the original redemption date scheduled to the actual date of payment. In this case, the actual payment date will be considered the redemption date for purposes of calculating the redemption amount.

If less than all of the outstanding shares of Series F Preferred Stock are to be redeemed on a redemption date, then the aggregate liquidation amount of Trust XIII HITS and Trust XIII Common Securities to be redeemed shall be allocated *pro rata* to the Trust XIII HITS and Trust XIII Common Securities based upon the relative liquidation amounts of such classes, except as set forth below under "— Ranking of Trust XIII Common Securities." The property trustee will select the particular Trust XIII HITS to be redeemed on a *pro rata* basis not more than 60 days before the redemption date from the outstanding Trust XIII HITS not previously called for redemption by any method the property trustee deems fair and appropriate, or, if the Trust XIII HITS are in book-entry only form, in accordance with the procedures of DTC. The property trustee shall promptly notify the transfer agent in writing of the Trust XIII HITS selected for redemption and, in the case of any Trust XIII HITS selected for redemption in part, the liquidation amount to be redeemed.

For all purposes of the Trust XIII Declaration of Trust, unless the context otherwise requires, all provisions relating to the redemption of Trust XIII HITS shall relate, in the case of any Trust XIII HITS redeemed or to be redeemed only in part, to the portion of the aggregate liquidation amount of Trust XIII HITS that has been or is to be redeemed. If less than all of the Trust XIII HITS are redeemed, the Trust XIII HITS held through the facilities of DTC will be redeemed *pro rata* in accordance with DTC's internal procedures.

The holders of the Trust XIII HITS do not have any optional redemption rights.

Company Guarantee of Trust XIII HITS

The Company has irrevocably guaranteed (the "**Trust XIII Guarantee**"), on a junior subordinated basis, the payment in full of any accumulated and unpaid distributions required to the paid on the Trust XIII HITS and the redemption price for any Trust XIII HITS called for

redemption, in each case to the extent Trust XIII has funds available to make the payment, as well as upon a voluntary or involuntary dissolution, winding-up or liquidation of Trust XIII (other than in connection with a distribution of corresponding assets to the holders of the Trust XIII HITS), the lesser of (i) the aggregate of the liquidation amount and all accumulated and unpaid distributions on the Trust XIII HITS to the date of payment to the extent Trust XIII has funds available to make the payment, and (ii) the amount of assets of Trust XIII remaining available for distribution to holders of Trust XIII HITS upon liquidation of Trust XIII. The Trust XIII Guarantee is a guarantee of payment and not of collection.

The Trust XIII Guarantee may be amended only with the prior approval of the holders of not less than a majority in aggregate liquidation amount of the outstanding Trust XIII HITS. No vote will be required, however, for any changes that do not adversely affect the rights of the holders of the Trust XIII HITS in any material respect.

The Company's obligations under the Trust XIII Guarantee are unsecured, are subordinated to and junior in right of payment to all of the Company's secured and senior and subordinated indebtedness, and rank on a parity with all other similar guarantees issued by the Company.

The Trust XIII HITS and the Trust XIII Guarantee do not limit the Company's ability or the ability of its subsidiaries to incur additional indebtedness, including indebtedness that ranks senior to or equally with the Trust XIII Guarantee.

The Trust XIII Guarantee, when taken together with the Company's obligations under the Trust XIII Declaration of Trust, including the obligations to pay costs, expenses, debts and liabilities of Trust XIII, other than liabilities with respect to the Trust XIII securities, has the effect of providing a full and unconditional guarantee on an unsecured and junior subordinated basis of amounts due on the Trust XIII HITS.

The HITS Guarantee Agreement dated as of February 16, 2007 between the Company, as guarantor, and The Bank of New York Mellon (formerly known as The Bank of New York), as guarantee trustee, related to the Trust XIII HITS, is included as an exhibit to the Company's Current Report on Form 8-K filed with the SEC on February 16, 2007.

Liquidation Distribution upon Dissolution

The Company can at any time dissolve and liquidate Trust XIII. Pursuant to the Trust XIII Declaration of Trust, Trust XIII shall dissolve on the first to occur of:

- upon the Company's bankruptcy, dissolution or liquidation;
- upon the filing of a certificate of dissolution or its equivalent with respect to the Company;
- upon the consent of the holders of at least a majority in aggregate liquidation amount of Trust XIII securities voting together as a single class to dissolve Trust XIII;
- upon the revocation of the Company's charter and the expiration of 90 days after the date of revocation without a reinstatement thereof;
- at the Company's election at any time pursuant to which Trust XIII has been dissolved in accordance with the terms of the Trust XIII securities and upon the distribution of the assets of Trust XIII corresponding to its securities to the holders of Trust XIII securities;

- upon the entry of a decree of judicial dissolution of the holder of the Trust XIII Common Securities, the Company or Trust XIII; or

- upon the redemption of all of the Trust XIII HITS.

Except as set forth in the next paragraph, if an early dissolution occurs as a result of certain events of the Company's bankruptcy, dissolution or liquidation, or if an early dissolution occurs as a result of the entry of an order for the dissolution of Trust XIII by a court of competent jurisdiction, the property trustee and the regular trustees will liquidate Trust XIII as expeditiously as they determine possible by distributing, after satisfaction of liabilities to creditors of Trust XIII as provided by applicable law, to each holder of Trust XIII HITS a like amount of corresponding assets as of the date of such distribution. Trust XIII shall give notice of liquidation to each holder of Trust XIII HITS at least 15 days and not more than 60 days before the date of liquidation.

If, whether because of an order for dissolution entered by a court of competent jurisdiction or otherwise, the property trustee determines that distribution of the corresponding assets in the manner provided above is not practical, or if the early dissolution occurs as a result of the redemption of all the Trust XIII HITS, the property trustee and the regular trustees shall liquidate the property of Trust XIII and wind up its affairs in such manner as they determine. In that case, upon the winding-up of Trust XIII, except with respect to an early dissolution that occurs as a result of the redemption of all the Trust XIII HITS, the holders of the Trust XIII securities will be entitled to receive out of the assets of Trust XIII available for distribution to holders and after satisfaction of liabilities to creditors of Trust XIII as provided by applicable law, an amount equal to the liquidation amount per Trust XIII security plus accumulated and unpaid distributions to the date of payment. If, upon any such winding-up, Trust XIII has insufficient assets available to pay in full such aggregate liquidation distribution, then the amounts payable directly by Trust XIII on the Trust XIII securities shall be paid on a pro rata basis, except as set forth below under "— Ranking of Trust XIII Common Securities."

The term "*like amount*" as used above means, with respect to a distribution of Series F Preferred Stock to holders of Trust XIII securities in connection with a dissolution or liquidation of Trust XIII therefor, Series F Preferred Stock having a liquidation preference equal to the liquidation amount of the Trust XIII securities of the holder to whom such Series F Preferred Stock would be distributed.

Distribution of Trust Assets

Upon liquidation of Trust XIII other than as a result of an early dissolution upon the redemption of all the Trust XIII HITS and after satisfaction of the liabilities of creditors of Trust XIII as provided by applicable law, the assets of Trust XIII will be distributed to the holders of the Trust XIII securities in exchange therefor.

After the liquidation date fixed for any distribution of assets of Trust XIII:

- the Trust XIII HITS will no longer be deemed to be outstanding;

- if the assets to be distributed are shares of Series F Preferred Stock, DTC or its nominee, as the record holder of the Trust XIII HITS, will receive a registered global certificate or certificates representing the shares of Series F Preferred Stock to be delivered upon such distribution;

- any certificates representing the Trust XIII HITS not held by DTC or its nominee or surrendered to the exchange agent will be deemed to represent shares of Series F

Preferred Stock having a liquidation preference equal to the Trust XIII HITS until such certificates are so surrendered for transfer and reissuance; and

- all rights of the holders of the Trust XIII HITS will cease, except the right to receive Series F Preferred Stock upon such surrender.

As each Trust XIII HITS corresponds to 1/100th of a share of Series F Preferred Stock, holders of Trust XIII HITS may receive fractional shares of Series F Preferred Stock or depositary shares representing the Series F Preferred Stock upon this distribution. Since holders of the Series F Preferred Stock are not entitled to vote for the election of directors in the event the Company does not pay full dividends for six quarterly dividend periods, the Series F Preferred Stock (or depositary shares representing the Series F Preferred Stock) would not qualify for listing on the NYSE under its current rules.

Ranking of Trust XIII Common Securities

If on any distribution date Trust XIII does not have funds available from payments of dividends on the Series F Preferred Stock to make full distributions on the Trust XIII HITS and the Trust XIII Common Securities, then, if the deficiency in funds results from the Company's failure to pay a full dividend on shares of Series F Preferred Stock on a dividend payment date, then the available funds from dividends on the Series F Preferred Stock will be applied first to make distributions then due on the Trust XIII HITS on a pro rata basis on such distribution date up to the amount of such distributions corresponding to dividends on the Series F Preferred Stock (or, if less, the amount of the corresponding distributions that would have been made on the Trust XIII HITS had the Company paid a full dividend on the Series F Preferred Stock) before any such amount is applied to make a distribution on Trust XIII Common Securities on such distribution date.

If, on any date where Trust XIII HITS and Trust XIII Common Securities must be redeemed because the Company is redeeming Series F Preferred Stock, Trust XIII does not have funds available from the Company's redemption of shares of Series F Preferred Stock to pay the full redemption price then due on all of the outstanding Trust XIII HITS and Trust XIII Common Securities to be redeemed, then (1) the available funds shall be applied first to pay the redemption price on the Trust XIII HITS to be redeemed on such redemption date and (2) Trust XIII Common Securities shall be redeemed only to the extent funds are available for such purpose after the payment of the full redemption price on the Trust XIII HITS to be redeemed.

If an early dissolution event occurs in respect of Trust XIII, no liquidation distributions will be made on the Trust XIII Common Securities until full liquidation distributions have been made on the Trust XIII HITS.

In the case of any event of default under the Trust XIII Declaration of Trust resulting from the Company's failure to comply in any material respect with any of its obligations as issuer of the Series F Preferred Stock, including obligations set forth in the Company's Restated Certificate of Incorporation, of or arising under applicable law, the Company, as holder of the Trust XIII Common Securities, will be deemed to have waived any right to act with respect to any such event of default under the Trust XIII Declaration of Trust until the effect of all such events of default with respect to the Trust XIII HITS have been cured, waived or otherwise eliminated. Until all events of default under the Trust XIII Declaration of Trust have been so cured, waived or otherwise eliminated, the property trustee shall act solely on behalf of the holders of the Trust XIII HITS and not on the Company's behalf, and only the holders of the Trust XIII HITS will have the right to direct the property trustee to act on their behalf.

Events of Default; Notice

Any one of the following events constitutes an event of default under the Trust XIII Declaration of Trust (a "**Trust XIII Event of Default**") regardless of the reason for such event of default and whether it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body:

- the Company's failure to comply in any material respect with its obligations as issuer of the Series F Preferred Stock, under the Restated Certificate of Incorporation, or arising under applicable law;
- the default by Trust XIII in the payment of any distribution on any trust security of Trust XIII when such becomes due and payable, and continuation of such default for a period of 30 days;
- the default by Trust XIII in the payment of any redemption price of any trust security of Trust XIII when such becomes due and payable;
- the failure to perform or the breach, in any material respect, of any other covenant or warranty of the trustees in the Trust XIII Declaration of Trust and the continuation of such default or breach for 90 days after the Company and the trustees have received written notice of the failure to perform or breach in the manner specified in such Trust XIII Declaration of Trust; or
- the occurrence of certain events of bankruptcy or insolvency with respect to the property trustee and the Company's failure to appoint a successor property trustee within 90 days.

Within 30 days after any Trust XIII Event of Default actually known to the property trustee occurs, the property trustee will transmit notice of such Trust XIII Event of Default to the holders of the affected class of Trust XIII securities and to the regular trustees, unless such Trust XIII Event of Default shall have been cured or waived. The Company, as sponsor, and the regular trustees are required to file annually with the property trustee a certificate as to whether or not the Company or the regular are in compliance with all the conditions and covenants applicable to the Company and to them under the Trust XIII Declaration of Trust.

Removal of Trustees

The property trustee and/or the Delaware trustee may be removed at any time by the holder of the Trust XIII Common Securities. The property trustee and the Delaware trustee may be removed by the holders of a majority in liquidation amount of the outstanding Trust XIII HITS for cause. In no event will the holders of the Trust XIII HITS have the right to vote to appoint, remove or replace the regular trustees, which voting rights are vested exclusively in the Company, as the holder of the Trust XIII Common Securities. No resignation or removal of a trustee and no appointment of a successor trustee shall be effective until the acceptance of appointment by the successor trustee in accordance with the provisions of the Trust XIII Declaration of Trust.

Co-Trustees and Separate Property Trustee

At any time or from time to time, for the purpose of meeting the legal requirements of the Trust Indenture Act or of any jurisdiction in which any part of Trust XIII property may at the time be located, the Company, as the holder of the Trust XIII Common Securities, and the

regular trustees shall have the power to appoint one or more persons either to act as a co-trustee, jointly with the property trustee, of all or any part of such trust property, or to act as separate trustee of any such property, in either case with such powers as may be provided in the instrument of appointment, and to vest in such person or persons in such capacity any property, title, right or power deemed necessary or desirable, subject to the provisions of such Trust XIII Declaration of Trust.

Mergers, Consolidations, Amalgamations or Replacements of Trust XIII

Trust XIII may not consolidate, amalgamate, or merge with or into, or be replaced by, or convey, transfer, or lease its properties and assets substantially as an entirety, to the Company or any other person, except as described below. Trust XIII may, with the consent of the regular trustees but without the consent of the holders of the applicable Trust XIII securities, the property trustee, or the Delaware trustee, consolidate, amalgamate, or merge with or into, or be replaced by, a trust organized under the laws of any state if:

- the successor entity, if not Trust XIII, either:
    - expressly assumes all of the obligations of Trust XIII with respect to the Trust XIII securities, or
    - substitutes for the Trust XIII securities other securities having substantially the same terms as the Trust XIII securities, so long as the successor securities rank the same as the Trust XIII securities in priority with respect to distributions and payments upon liquidation, redemption, and otherwise;
- the Trust XIII HITS or any successor securities are listed, or any successor securities will be listed upon notification of issuance, on any national or international securities exchange or with another organization, if any, on which the Trust XIII HITS are then listed or quoted;
- the merger, consolidation, amalgamation, or replacement does not cause the Trust XIII HITS, including any successor securities, to be downgraded by any nationally recognized statistical rating organization;
- the merger, consolidation, amalgamation, or replacement does not adversely affect the rights, preferences, and privileges of the holders of Trust XIII securities, including any successor securities, in any material respect, other than in connection with any dilution of the holders' interest in the new entity;
- the successor entity has a purpose identical to that of Trust XIII;
- prior to the merger, consolidation, amalgamation, or replacement, the Company has received an opinion of counsel to Trust XIII to the effect that:
    - the merger, consolidation, amalgamation, or replacement does not adversely affect the rights, preferences, and privileges of the holders of Trust XIII securities, including any successor securities, in any material respect, other than in connection with any dilution of the holders' interest in the new entity;
    - following the merger, consolidation, amalgamation, or replacement, neither Trust XIII nor the successor entity will be required to register as an

investment company under the Investment Company Act of 1940, as amended (the "**Investment Company Act**"); and

- following the merger, consolidation, amalgamation, or replacement, Trust XIII or the successor entity will continue to be classified as a grantor trust for U.S. federal income tax purposes; and

- the Company guarantees the obligations of the successor entity under the successor securities at least to the extent provided by the guarantees of the Trust XIII securities.

Trust XIII may not, except with the consent of holders of 100% in liquidation amount of its Trust XIII securities, consolidate, amalgamate, merge with or into, or be replaced by any other entity or permit any other entity to consolidate, amalgamate, merge with or into, or replace it if that consolidation, merger, amalgamation, or replacement would cause Trust XIII or the successor entity to be classified as other than a grantor trust for U.S. federal income tax purposes.

Voting Rights; Amendment of the Trust XIII Declaration of Trust

Except as provided herein and under "—Company Guarantee of Trust XIII HITS" above and as otherwise required by law and the Trust XIII Declaration of Trust, the holders of the Trust XIII HITS will have no voting rights or control over the administration, operation or management of Trust XIII or the obligations of the parties to the Trust XIII Declaration of Trust, including in respect of Series F Preferred Stock beneficially owned by Trust XIII. Under the Trust XIII Declaration of Trust, however, the property trustee will be required to obtain their consent before exercising some of its rights in respect of these securities.

Trust XIII Declaration of Trust. The Company and the regular trustees may amend the Trust XIII Declaration of Trust without the consent of the holders of the Trust XIII HITS, the property trustee or the Delaware trustee, unless in the case of the first two bullets below such amendment will materially and adversely affect the interests of any holder of Trust XIII HITS or the property trustee or the Delaware trustee, to:

- cure any ambiguity, correct or supplement any provisions in the Trust XIII Declaration of Trust that may be inconsistent with any other provision, or to make any other provisions with respect to matters or questions arising under such Trust XIII Declaration of Trust, which may not be inconsistent with the other provisions of the Trust XIII Declaration of Trust;

- modify, eliminate or add to any provisions of the Trust XIII Declaration of Trust to such extent as shall be necessary to ensure that Trust XIII will be classified for U.S. federal income tax purposes as one or more grantor trusts and/or agency arrangements and not as an association or a publicly traded partnership taxable as a corporation at all times that any Trust XIII securities are outstanding, to ensure that Trust XIII will not be required to register as an "investment company" under the Investment Company Act or to ensure the treatment of Trust XIII HITS as Tier 1 regulatory capital under prevailing Federal Reserve rules and regulations;

- provide that certificates for Trust XIII HITS may be executed by a regular trustee by facsimile signature instead of manual signature, in which case such amendment(s) shall also provide for the appointment by the Company of an authentication agent and certain related provisions;

- require that holders that are not U.S. persons for U.S. federal income tax purposes irrevocably appoint a U.S. person to exercise any voting rights to ensure that Trust XIII will not be treated as a foreign trust for U.S. federal income tax purposes; or

- conform the terms of the Trust XIII Declaration of Trust to the description of the Trust XIII Declaration of Trust, the Trust XIII HITS and the Trust XIII Common Securities in the prospectus supplement relating to the initial offering of the Trust XIII HITS, in the manner provided in the Trust XIII Declaration of Trust.

Any such amendment shall become effective when notice thereof is given to the property trustee, the Delaware Trustee and the holders of the Trust XIII HITS.

The Company and the regular trustees may generally amend the Trust XIII Declaration of Trust with:

- the consent of holders representing not less than a majority, based upon liquidation amounts, of each outstanding class of Trust XIII HITS affected by the amendments; and

- receipt by the trustees of Trust XIII of an opinion of counsel to the effect that such amendment or the exercise of any power granted to the trustees of Trust XIII or the regular trustees in accordance with such amendment will not affect Trust XIII's status as one or more grantor trusts and/or agency arrangements for U.S. federal income tax purposes or affect Trust XIII's exemption from status as an "investment company" under the Investment Company Act.

However, without the consent of each affected holder of Trust securities, the Trust XIII Declaration of Trust may not be amended to:

- change the amount or timing, or otherwise adversely affect the amount, of any distribution required to be made in respect of Trust XIII securities as of a specified date; or

- restrict the right of a holder of Trust XIII securities to institute a suit for the enforcement of any such payment on or after such date.

Series F Preferred Stock. So long as the Series F Preferred Stock is held by the property trustee on behalf of Trust XIII, the trustees of Trust XIII will not waive any default in respect of the Series F Preferred Stock without obtaining the prior approval of the holders of at least a majority in liquidation amount of the Trust XIII HITS then outstanding. The trustees of Trust XIII also shall not consent to any amendment to Trust XIII's or the Company's governing documents that would change the dates on which dividends are payable or the amount of such dividends, without the prior written consent of each holder of Trust XIII HITS. In addition to obtaining the foregoing approvals from holders, the trustees of Trust XIII shall obtain, at the Company's expense, an opinion of counsel to the effect that such action shall not cause Trust XIII to be taxable as a corporation or classified as a partnership for U.S. federal income tax purposes.

General. Any required approval of holders of Trust XIII HITS may be given at a meeting of holders of such class of Trust XIII HITS convened for such purpose or pursuant to written consent. The property trustee will cause a notice of any meeting at which holders of Trust XIII HITS are entitled to vote, or of any matter upon which action by written consent of such holders is to be taken, to be given to each record holder of such Trust XIII HITS in the manner set forth in the Trust XIII Declaration of Trust.

No vote or consent of the holders of Trust XIII HITS will be required for Trust XIII to redeem and cancel the Trust XIII HITS in accordance with the Trust XIII Declaration of Trust.

Notwithstanding that holders of the Trust XIII HITS are entitled to vote or consent under any of the circumstances described above, any of the Trust XIII HITS that are owned by the Company or its affiliates or the trustees or any of their affiliates shall, for purposes of such vote or consent, be treated as if they were not outstanding.

Payment and Paying Agent

Payments on the Trust XIII HITS shall be made to DTC by the paying agent, which shall credit the relevant accounts on the applicable distribution dates. If any Trust XIII HITS are not held by DTC, the paying agent shall make such payments by check mailed to the address of the holder as such address shall appear on the register.

The "paying agent" is The Bank of New York Mellon Trust Company, N.A. (formerly known as The Bank of New York Trust Company, N.A.) and any co-paying agent chosen by the property trustee and acceptable to the Company and to the regular trustees. The paying agent shall be permitted to resign as paying agent upon 30 days written notice to the regular trustees and to the property trustee. In the event that The Bank of New York Mellon Trust Company, N.A. shall no longer be the paying agent, the property trustee will appoint a successor to act as paying agent, which will be a bank or trust company acceptable to the regular trustees and to the Company.

Registrar and Transfer Agent

The Bank of New York Mellon Trust Company, N.A. acts as registrar and transfer agent for the Trust XIII HITS.

Registration of transfers of Trust XIII HITS will be effected without charge by or on behalf of Trust XIII but after payment of any tax or other governmental charges that may be imposed in connection with any transfer or exchange. Neither Trust XIII nor the transfer agent shall be required to register the transfer of or exchange any trust security during a period beginning at the opening of business 15 days before the day of selection for redemption of Trust XIII securities and ending at the close of business on the day of mailing of notice of redemption or to transfer or exchange any trust security so selected for redemption in whole or in part, except, in the case of any trust security to be redeemed in part, any portion thereof not to be redeemed.

Any Trust XIII HITS can be exchanged for other Trust XIII HITS so long as such other Trust XIII HITS are denominated in authorized denominations and have the same aggregate liquidation amount and same terms as the Trust XIII HITS that were surrendered for exchange. The Trust XIII HITS may be presented for registration of transfer, duly endorsed or accompanied by a satisfactory written instrument of transfer, at the office or agency maintained by the Company for that purpose in a place of payment. There will be no service charge for any registration of transfer or exchange of the Trust XIII HITS, but the Company may require holders to pay any tax or other governmental charge payable in connection with a transfer or exchange of the Trust XIII HITS. The Company may at any time rescind the designation or approve a change in the location of any office or agency, in addition to the security registrar, designated by the Company where holders can surrender the Trust XIII HITS for registration of transfer or exchange. However, Trust XIII will be required to maintain an office or agency in each place of payment for the Trust XIII HITS.

Information Concerning the Property Trustee

Other than during the occurrence and continuance of a Trust XIII Event of Default, the property trustee undertakes to perform only the duties that are specifically set forth in the Trust XIII Declaration of Trust. After a Trust XIII Event of Default, the property trustee must exercise the same degree of care and skill as a prudent individual would exercise or use in the conduct of his or her own affairs. Subject to this provision, the property trustee is under no obligation to exercise any of the powers vested in it by the Trust XIII Declaration of Trust at the request of any holder of Trust XIII HITS unless it is offered indemnity satisfactory to it by such holder against the costs, expenses and liabilities that might be incurred. However, the holders of the Trust XIII HITS will not be required to offer any indemnity if those holders, by exercising their voting rights, direct the property trustee to take any action following an event of default under the Trust XIII Declaration of Trust. If no Trust XIII Event of Default has occurred and is continuing and the property trustee is required to decide between alternative courses of action, construe ambiguous provisions in the Trust XIII Declaration of Trust or is unsure of the application of any provision of the Trust XIII Declaration of Trust, and the matter is not one upon which holders of Trust XIII HITS are entitled under the Trust XIII Declaration of Trust to vote, then the property trustee will take any action that the Company directs. If the Company does not provide direction, the property trustee may take any action that it deems advisable and in the interests of the holders of the Trust XIII securities and will have no liability except for its own bad faith, negligence or willful misconduct.

The Company and certain of its affiliates have from time to time maintained deposit accounts and conducted other banking transactions with the property trustee and its affiliated entities in the ordinary course of business. The Company expects to continue those business transactions. The property trustee or its affiliates also serve as trustee for a number of series of the Company's outstanding indebtedness under other indentures.

Trust Expenses

Pursuant to the Trust XIII Declaration of Trust, the Company, as sponsor, agrees to pay:

- all debts and other obligations of Trust XIII (other than with respect to the Trust XIII HITS);
- all costs and expenses of Trust XIII, including costs and expenses relating to the organization of Trust XIII, the fees and expenses of the trustees and the cost and expenses relating to the operation of Trust XIII; and
- any and all taxes and costs and expenses with respect thereto, other than U.S. withholding taxes, to which Trust XIII might become subject.

Miscellaneous

The regular trustees are authorized and directed to conduct the affairs of and to operate Trust XIII in such a way that it will not be required to register as an "investment company" under the Investment Company Act or characterized as other than one or more grantor trusts and/or agency arrangements for U.S. federal income tax purposes. In this regard, the Company, as sponsor of Trust XIII, and the regular trustees are authorized to take any action, not inconsistent with applicable law, the certificate of trust of Trust XIII or the Trust XIII Declaration of Trust, that the Company and the regular trustees determine to be necessary or desirable to achieve such end, as long as such action does not materially and adversely affect the interests of the holders of the Trust XIII HITS.

Holders of the Trust XIII HITS have no preemptive or similar rights. The Trust XIII HITS are not convertible into or exchangeable for the Company's Common Stock or any series of the Company's preferred stock (including Series F Preferred Stock).

DESCRIPTION OF 5.63% FIXED TO FLOATING RATE PREFERRED HYBRID INCOME TERM SECURITIES OF BAC CAPITAL TRUST XIV (AND THE GUARANTEE OF THE REGISTRANT RELATED THERETO)

This section describes the 5.63% Fixed to Floating Rate Preferred Hybrid Income Term Securities of BAC Capital Trust XIV (the "**Trust XIV HITS**") and the Company's guarantee related thereto. The Trust XIV HITS are listed on the NYSE under the symbol "BAC/PG".

General

The Trust XIV HITS are a class of preferred beneficial interests in BAC Capital Trust XIV, a Delaware statutory trust ("**Trust XIV**"), and are issued pursuant to the Amended and Restated Declaration of Trust of BAC Capital Trust XIV (the "**Trust XIV Declaration of Trust**") dated as of February 16, 2007 among the Company, as sponsor, The Bank of New York Mellon (formerly known as The Bank of New York), as property trustee, BNY Mellon Trust of Delaware (formerly known as The Bank of New York (Delaware)), as Delaware Trustee, the regular trustees named therein and the holders of the trust securities. The terms of the Trust XIV HITS include those stated in the Trust XIV Declaration of Trust, any amendments thereto, and those made a part of the Trust XIV Declaration of Trust by the Trust Indenture Act and the Delaware Statutory Trust Act. The Trust XIV Declaration of Trust is included as an exhibit to the Company's Current Report on Form 8-K filed with the SEC on February 16, 2007. As of December 31, 2022, 492,537 Trust XIV HITS (having an aggregate liquidation amount of approximately $492.5 million) were outstanding.

The common securities of Trust XIV ("**Trust XIV Common Securities**") are held directly or indirectly by the Company. The Trust XIV Common Securities rank on a parity, and payments upon redemption, liquidation or otherwise will be made on a proportionate basis, with the Trust XIV HITS, except as set forth below in "—Ranking of Trust XIV Common Securities". The Trust XIV Declaration of Trust does not permit Trust XIV to issue any securities other than the Trust XIV Common Securities and the Trust XIV HITS or to incur any indebtedness.

The assets of Trust XIV consist of shares of the Company's Adjustable Rate Non-Cumulative Preferred Stock, Series G (the "**Series G Preferred Stock**"), which Trust XIV owns for the benefit of the holders of its Trust XIV HITS and Trust XIV Common Securities (together, the "**Trust XIV securities**"). Each Trust XIV HITS has a liquidation amount of $1,000 and represents a beneficial interest in Trust XIV that corresponds to $1/100^{th}$ of a share of Series G Preferred Stock. Because Trust XIV is a pass-through vehicle, Trust XIV will distribute to holders of Trust XIV securities the dividends that it receives on the Series G Preferred Stock. For a description of the terms of the Series G Preferred Stock, see "Description of Preferred Stock – Series G Preferred Stock" above.

Trust XIV's business and affairs are conducted by its trustees, each appointed by the Company as sponsor of Trust XIV.

The Trust XIV HITS are issued in registered book-entry only form and are held in the name of DTC or its nominee.

Distributions

Trust XIV must make distributions on the Trust XIV HITS on relevant distribution dates to the extent that it has funds available therefor. The distribution dates for the Trust XIV HITS are March 15, June 15, September 15 and December 15 of each year. A distribution period is each period beginning on a distribution date and continuing to, but not including, the next succeeding distribution date. When a distribution date is not a business day (as defined in the

Trust XIV Declaration of Trust), Trust XIV will make the distribution on the next business day without interest. Distributions are calculated on the basis of a 360-day year and the number of days actually elapsed in a distribution period.

Holders of Trust XIV HITS will be entitled to receive distributions corresponding to dividends on the Series G Preferred Stock. These non-cumulative cash dividends will be payable in arrears if, as and when declared by the Board (or a committee of the Board) on the quarterly dividend payment dates, which each March 15, June 15, September 15 and December 15 (or if such day is not a business day, the next business day). For additional information about dividends on the Series G Preferred Stock, see "Description of Preferred Stock – Series G Preferred Stock" above.

Trust XIV will make distributions on the Trust XIV HITS only to the extent it has received dividends on the Series G Preferred Stock.

Distributions on the Trust XIV HITS will be payable to the holders as they appear in the security register of Trust XIV on the relevant record dates. The record date will be the last day of the month immediately preceding the month in which the relevant distribution date falls.

Mandatory Redemption of Trust XIV HITS upon Redemption of Series G Preferred Stock

The Trust XIV HITS have no stated maturity but must be redeemed on the date the Company redeems the Series G Preferred Stock, and the property trustee or paying agent will apply the proceeds from such repayment or redemption to redeem a like amount, as defined below, of the Trust XIV HITS. The Series G Preferred Stock is perpetual but the Company generally may redeem it at any time. The redemption price per Trust XIV HITS will equal the liquidation amount per Trust XIV HITS plus accumulated and unpaid distributions to, but excluding, the redemption date.

If less than all of the shares of Series G Preferred Stock held by Trust XIV are to be redeemed on a redemption date, then the proceeds from such redemption will be allocated pro rata to the redemption of the Trust XIV HITS and the Trust XIV Common Securities, except as set forth below under "— Ranking of Trust XIV Common Securities."

The term "*like amount*" as used above means Trust XIV HITS having a liquidation amount equal to that portion of the liquidation amount of the Series G Preferred Stock to be contemporaneously redeemed, the proceeds of which will be used to pay the redemption price of such Trust XIV HITS.

Redemption Procedures. Notice of any redemption will be mailed at least 15 days but not more than 60 days before the redemption date to the registered address of each holder of Trust XIV HITS to be redeemed.

If (1) Trust XIV gives an irrevocable notice of redemption of Trust XIV HITS for cash and (2) the Company has paid to the property trustee a sufficient amount of cash in connection with the related redemption of the Series G Preferred Stock, then on the redemption date, the property trustee will irrevocably deposit with DTC funds sufficient to pay the redemption price for the Trust XIV HITS being redeemed. Trust XIV will also give DTC irrevocable instructions and authority to pay the redemption amount in immediately available funds to the beneficial owners of the Trust XIV HITS. Distributions to be paid on or before the redemption date for any Trust XIV HITS called for redemption will be payable to the holders as of the record dates for the related dates of distribution. If the Trust XIV HITS called for redemption are no longer in book-entry form, the property trustee, to the extent funds are available, will irrevocably deposit with the paying agent for the Trust XIV HITS funds sufficient to pay the applicable redemption

price and will give such paying agent irrevocable instructions and authority to pay the redemption price to the holders thereof upon surrender of their certificates evidencing the Trust XIV HITS.

If notice of redemption shall have been given and funds deposited as required, then upon the date of such deposit:

- all rights of the holders of such Trust XIV HITS called for redemption will cease, except the right of the holders of such Trust XIV HITS to receive the redemption price and any distribution payable in respect of the Trust XIV HITS on or prior to the redemption date, but without interest on such redemption price; and

- the Trust XIV HITS called for redemption will cease to be outstanding.

If any redemption date is not a business day, then the redemption amount will be payable on the next business day (and without any interest or other payment in respect of any such delay). However, if payment on the next business day causes payment of the redemption amount to be in the next calendar month, then payment will be on the preceding business day.

If payment of the redemption amount for any shares of Series G Preferred Stock called for redemption is improperly withheld or refused and accordingly the redemption amount of the Trust XIV HITS is not paid either by Trust XIV or by the Company under the Trust XIV Guarantee (as defined below), then dividends on the Series G Preferred Stock will continue to accrue and distributions on such Trust XIV HITS called for redemption will continue to accumulate at the applicable rate then borne by such Trust XIV HITS from the original redemption date scheduled to the actual date of payment. In this case, the actual payment date will be considered the redemption date for purposes of calculating the redemption amount.

If less than all of the outstanding shares of Series G Preferred Stock are to be redeemed on a redemption date, then the aggregate liquidation amount of Trust XIV HITS and Trust XIV Common Securities to be redeemed shall be allocated *pro rata* to the Trust XIV HITS and Trust XIV Common Securities based upon the relative liquidation amounts of such classes, except as set forth below under "— Ranking of Trust XIV Common Securities." The property trustee will select the particular Trust XIV HITS to be redeemed on a *pro rata* basis not more than 60 days before the redemption date from the outstanding Trust XIV HITS not previously called for redemption by any method the property trustee deems fair and appropriate, or, if the Trust XIV HITS are in book-entry only form, in accordance with the procedures of DTC. The property trustee shall promptly notify the Transfer Agent in writing of the Trust XIV HITS selected for redemption and, in the case of any Trust XIV HITS selected for redemption in part, the liquidation amount to be redeemed.

For all purposes of the Trust XIV Declaration of Trust, unless the context otherwise requires, all provisions relating to the redemption of Trust XIV HITS shall relate, in the case of any Trust XIV HITS redeemed or to be redeemed only in part, to the portion of the aggregate liquidation amount of Trust XIV HITS that has been or is to be redeemed. If less than all of the Trust XIV HITS are redeemed, the Trust XIV HITS held through the facilities of DTC will be redeemed *pro rata* in accordance with DTC's internal procedures.

The holders of the Trust XIV HITS do not have any optional redemption rights.

Company Guarantee of Trust XIV HITS

The Company has irrevocably guaranteed (the "**Trust XIV Guarantee**"), on a junior subordinated basis, the payment in full of any accumulated and unpaid distributions required to

the paid on the Trust XIV HITS and the redemption price for any Trust XIV HITS called for redemption, in each case to the extent Trust XIV has funds available to make the payment, as well as upon a voluntary or involuntary dissolution, winding-up or liquidation of Trust XIV (other than in connection with a distribution of corresponding assets to the holders of the Trust XIV HITS), the lesser of (i) the aggregate of the liquidation amount and all accumulated and unpaid distributions on the Trust XIV HITS to the date of payment to the extent Trust XIV has funds available to make the payment, and (ii) the amount of assets of Trust XIV remaining available for distribution to holders of Trust XIV HITS upon liquidation of Trust XIV. The Trust XIV Guarantee is a guarantee of payment and not of collection.

The Trust XIV Guarantee may be amended only with the prior approval of the holders of not less than a majority in aggregate liquidation amount of the outstanding Trust XIV HITS. No vote will be required, however, for any changes that do not adversely affect the rights of the holders of the Trust XIV HITS in any material respect.

The Company's obligations under the Trust XIV Guarantee are unsecured, are subordinated to and junior in right of payment to all of the Company's secured and senior and subordinated indebtedness, and rank on a parity with all other similar guarantees issued by the Company.

The Trust XIV HITS and the Trust XIV Guarantee do not limit the Company's ability or the ability of its subsidiaries to incur additional indebtedness, including indebtedness that ranks senior to or equally with the Trust XIV Guarantee.

The Trust XIV Guarantee, when taken together with the Company's obligations under the Trust XIV Declaration of Trust, including the obligations to pay costs, expenses, debts and liabilities of Trust XIV, other than liabilities with respect to the Trust XIV securities, has the effect of providing a full and unconditional guarantee on an unsecured and junior subordinated basis of amounts due on the Trust XIV HITS.

The HITS Guarantee Agreement dated as of February 16, 2007 between the Company, as guarantor, and The Bank of New York Mellon (formerly known as The Bank of New York), as guarantee trustee, related to the Trust XIV HITS, is included as an exhibit to the Company's Current Report on Form 8-K filed with the SEC on February 16, 2007.

Liquidation Distribution upon Dissolution

The Company can at any time dissolve and liquidate Trust XIV. Pursuant to the Trust XIV Declaration of Trust, Trust XIV shall dissolve on the first to occur of:

- upon the Company's bankruptcy, dissolution or winding up;
- upon the filing of a certificate of dissolution or its equivalent with respect to the Company;
- upon the consent of the holders of at least a majority in aggregate liquidation amount of Trust XIV securities voting together as a single class to dissolve Trust XIV;
- upon the revocation of the Company's charter and the expiration of 90 days after the date of revocation without a reinstatement thereof;
- at the Company's election at any time pursuant to which Trust XIV has been dissolved in accordance with the terms of the Trust XIV securities and upon the distribution of the assets of Trust XIV corresponding to its securities to the holders of Trust XIV securities;

- upon the entry of a decree of judicial dissolution of the holder of the Trust XIV Common Securities, the Company or Trust XIV; or

- upon the redemption of all of the Trust XIV HITS.

Except as set forth in the next paragraph, if an early dissolution occurs as a result of certain events of the Company's bankruptcy, dissolution or liquidation, or if an early dissolution occurs as a result of the entry of an order for the dissolution of Trust XIV by a court of competent jurisdiction, the property trustee and the regular trustees will liquidate Trust XIV as expeditiously as they determine possible by distributing, after satisfaction of liabilities to creditors of Trust XIV as provided by applicable law, to each holder of Trust XIV HITS a like amount of corresponding assets as of the date of such distribution. Trust XIV shall give notice of liquidation to each holder of Trust XIV HITS at least 15 days and not more than 60 days before the date of liquidation.

If, whether because of an order for dissolution entered by a court of competent jurisdiction or otherwise, the property trustee determines that distribution of the corresponding assets in the manner provided above is not practical, or if the early dissolution occurs as a result of the redemption of all the Trust XIV HITS, the property trustee and the regular trustees shall liquidate the property of Trust XIV and wind up its affairs in such manner as they determine. In that case, upon the winding-up of Trust XIV, except with respect to an early dissolution that occurs as a result of the redemption of all the Trust XIV HITS, the holders will be entitled to receive out of the assets of Trust XIV available for distribution to holders of the Trust XIV securities and after satisfaction of liabilities to creditors of Trust XIV as provided by applicable law, an amount equal to the liquidation amount per Trust XIV security plus accumulated and unpaid distributions to the date of payment. If, upon any such winding-up, Trust XIV has insufficient assets available to pay in full such aggregate liquidation distribution, then the amounts payable directly by Trust XIV on the Trust XIV securities shall be paid on a pro rata basis, except as set forth below under "— Ranking of Trust XIV Common Securities."

The term "*like amount*" as used above means, with respect to a distribution of Series G Preferred Stock to holders of Trust XIV securities in connection with a dissolution or liquidation of Trust XIV therefor, Series G Preferred Stock having a liquidation preference equal to the liquidation amount of the Trust XIV securities of the holder to whom such Series G Preferred Stock would be distributed.

Distribution of Trust Assets

Upon liquidation of Trust XIV other than as a result of an early dissolution upon the redemption of all the Trust XIV HITS and after satisfaction of the liabilities of creditors of Trust XIV as provided by applicable law, the assets of Trust XIV will be distributed to the holders of the Trust XIV securities in exchange therefor.

After the liquidation date fixed for any distribution of assets of Trust XIV:

- the Trust XIV HITS will no longer be deemed to be outstanding;

- if the assets to be distributed are shares of Series G Preferred Stock, DTC or its nominee, as the record holder of the Trust XIV HITS, will receive a registered global certificate or certificates representing the shares of Series G Preferred Stock to be delivered upon such distribution;

- any certificates representing the Trust XIV HITS not held by DTC or its nominee or surrendered to the exchange agent will be deemed to represent shares of Series G

Preferred Stock having a liquidation preference equal to the Trust XIV HITS until such certificates are so surrendered for transfer and reissuance; and

- all rights of the holders of the Trust XIV HITS will cease, except the right to receive Series G Preferred Stock upon such surrender.

As each Trust XIV HITS corresponds to 1/100th of a share of Series G Preferred Stock, holders of Trust XIV HITS may receive fractional shares of Series G Preferred Stock or depositary shares representing the Series G Preferred Stock upon this distribution. Since holders of the Series G Preferred Stock are not entitled to vote for the election of directors in the event the Company does not pay full dividends for six quarterly dividend periods, the Series G Preferred Stock (or depositary shares representing the Series G Preferred Stock) would not qualify for listing on the NYSE under its current rules.

Ranking of Trust XIV Common Securities

If on any distribution date Trust XIV does not have funds available from payments of dividends on the Series G Preferred Stock to make full distributions on the Trust XIV HITS and the Trust XIV Common Securities, then, if the deficiency in funds results from the Company's failure to pay a full dividend on shares of Series G Preferred Stock on a dividend payment date, then the available funds from dividends on the Series G Preferred Stock will be applied first to make distributions then due on the Trust XIV HITS on a pro rata basis on such distribution date up to the amount of such distributions corresponding to dividends on the Series G Preferred Stock (or, if less, the amount of the corresponding distributions that would have been made on the Trust XIV HITS had the Company paid a full dividend on the Series G Preferred Stock) before any such amount is applied to make a distribution on Trust XIV Common Securities on such distribution date.

If, on any date where Trust XIV HITS and Trust XIV Common Securities must be redeemed because the Company is redeeming Series G Preferred Stock, Trust XIV does not have funds available from the Company's redemption of shares of Series G Preferred Stock to pay the full redemption price then due on all of the outstanding Trust XIV HITS and Trust XIV Common Securities to be redeemed, then (1) the available funds shall be applied first to pay the redemption price on the Trust XIV HITS to be redeemed on such redemption date and (2) Trust XIV Common Securities shall be redeemed only to the extent funds are available for such purpose after the payment of the full redemption price on the Trust XIV HITS to be redeemed.

If an early dissolution event occurs in respect of Trust XIV, no liquidation distributions will be made on the Trust XIV Common Securities until full liquidation distributions have been made on the Trust XIV HITS.

In the case of any event of default under the Trust XIV Declaration of Trust resulting from the Company's failure to comply in any material respect with any of its obligations as issuer of the Series G Preferred Stock, including obligations set forth in the Company's Restated Certificate of Incorporation of or arising under applicable law, the Company, as holder of the Trust XIV Common Securities, will be deemed to have waived any right to act with respect to any such event of default under the Trust XIV Declaration of Trust until the effect of all such events of default with respect to the Trust XIV HITS have been cured, waived or otherwise eliminated. Until all events of default under the Trust XIV Declaration of Trust have been so cured, waived or otherwise eliminated, the property trustee shall act solely on behalf of the holders of the Trust XIV HITS and not on the Company's behalf, and only the holders of the Trust XIV HITS will have the right to direct the property trustee to act on their behalf.

Events of Default; Notice

Any one of the following events constitutes an event of default under the Trust XIV Declaration of Trust (a "**Trust XIV Event of Default**") regardless of the reason for such event of default and whether it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body:

- the Company's failure to comply in any material respect with its obligations as issuer of the Series G Preferred Stock, under the Restated Certificate of Incorporation, or arising under applicable law;
- the default by Trust XIV in the payment of any distribution on any trust security of Trust XIV when such becomes due and payable, and continuation of such default for a period of 30 days;
- the default by Trust XIV in the payment of any redemption price of any trust security of Trust XIV when such becomes due and payable;
- the failure to perform or the breach, in any material respect, of any other covenant or warranty of the trustees in the Trust XIV Declaration of Trust and the continuation of such default or breach for 90 days after the Company and the trustees have received written notice of the failure to perform or breach in the manner specified in such Trust XIV Declaration of Trust; or
- the occurrence of certain events of bankruptcy or insolvency with respect to the property trustee and the Company's failure to appoint a successor property trustee within 90 days.

Within 30 days after any Trust XIV Event of Default actually known to the property trustee occurs, the property trustee will transmit notice of such Trust XIV Event of Default to the holders of the affected class of Trust XIV securities and to the regular trustees, unless such Trust XIV Event of Default shall have been cured or waived. The Company, as sponsor, and the regular trustees are required to file annually with the property trustee a certificate as to whether or not the Company or the regular trustees are in compliance with all the conditions and covenants applicable to the Company and to them under the Trust XIV Declaration of Trust.

Removal of Trustees

The property trustee and/or the Delaware trustee may be removed at any time by the holder of the Trust XIV Common Securities. The property trustee and the Delaware trustee may be removed by the holders of a majority in liquidation amount of the outstanding Trust XIV HITS for cause. In no event will the holders of the Trust XIV HITS have the right to vote to appoint, remove or replace the regular trustees, which voting rights are vested exclusively in the Company, as the holder of the Trust XIV Common Securities. No resignation or removal of a trustee and no appointment of a successor trustee shall be effective until the acceptance of appointment by the successor trustee in accordance with the provisions of the Trust XIV Declaration of Trust.

Co-Trustees and Separate Property Trustee

At any time or from time to time, for the purpose of meeting the legal requirements of the Trust Indenture Act or of any jurisdiction in which any part of Trust XIV property may at the time be located, the Company, as the holder of the Trust XIV Common Securities, and the

regular trustees shall have the power to appoint one or more persons either to act as a co-trustee, jointly with the property trustee, of all or any part of such trust property, or to act as separate trustee of any such property, in either case with such powers as may be provided in the instrument of appointment, and to vest in such person or persons in such capacity any property, title, right or power deemed necessary or desirable, subject to the provisions of such Trust XIV Declaration of Trust.

Mergers, Consolidations, Amalgamations or Replacements of Trust XIV

Trust XIV may not consolidate, amalgamate, or merge with or into, or be replaced by, or convey, transfer, or lease its properties and assets substantially as an entirety, to the Company or any other person, except as described below. Trust XIV may, with the consent of the regular trustees but without the consent of the holders of the applicable Trust XIV securities, the property trustee, or the Delaware trustee, consolidate, amalgamate, or merge with or into, or be replaced by, a trust organized under the laws of any state if:

- the successor entity, if not Trust XIV, either:
    - expressly assumes all of the obligations of Trust XIV with respect to the Trust XIV securities, or
    - substitutes for the Trust XIV securities other securities having substantially the same terms as the Trust XIV securities, so long as the successor securities rank the same as the Trust XIV securities in priority with respect to distributions and payments upon liquidation, redemption, and otherwise;
- the Trust XIV HITS or any successor securities are listed, or any successor securities will be listed upon notification of issuance, on any national or international securities exchange or with another organization, if any, on which the Trust XIV HITS are then listed or quoted;
- the merger, consolidation, amalgamation, or replacement does not cause the Trust XIV HITS, including any successor securities, to be downgraded by any nationally recognized statistical rating organization;
- the merger, consolidation, amalgamation, or replacement does not adversely affect the rights, preferences, and privileges of the holders of Trust XIV securities, including any successor securities, in any material respect, other than in connection with any dilution of the holders' interest in the new entity;
- the successor entity has a purpose identical to that of Trust XIV;
- prior to the merger, consolidation, amalgamation, or replacement, the Company has received an opinion of counsel to Trust XIV to the effect that:
    - the merger, consolidation, amalgamation, or replacement does not adversely affect the rights, preferences, and privileges of the holders of Trust XIV securities, including any successor securities, in any material respect, other than in connection with any dilution of the holders' interest in the new entity;

- following the merger, consolidation, amalgamation, or replacement, neither Trust XIV nor the successor entity will be required to register as an investment company under the Investment Company Act; and

- following the merger, consolidation, amalgamation, or replacement, Trust XIV or the successor entity will continue to be classified as a grantor trust for U.S. federal income tax purposes; and

- the Company guarantees the obligations of the successor entity under the successor securities at least to the extent provided by the guarantees of the Trust XIV securities.

Trust XIV may not, except with the consent of holders of 100% in liquidation amount of its Trust XIV securities, consolidate, amalgamate, merge with or into, or be replaced by any other entity or permit any other entity to consolidate, amalgamate, merge with or into, or replace it if that consolidation, merger, amalgamation, or replacement would cause Trust XIV or the successor entity to be classified as other than a grantor trust for U.S. federal income tax purposes.

Voting Rights; Amendment of the Trust XIV Declaration of Trust

Except as provided herein and under "—Company Guarantee of Trust XIV HITS" above and as otherwise required by law and the Trust XIV Declaration of Trust, the holders of the Trust XIV HITS will have no voting rights or control over the administration, operation or management of Trust XIV or the obligations of the parties to the Trust XIV Declaration of Trust, including in respect of Series G Preferred Stock beneficially owned by Trust XIV. Under the Trust XIV Declaration of Trust, however, the property trustee will be required to obtain their consent before exercising some of its rights in respect of these securities.

Trust XIV Declaration of Trust. The Company and the regular trustees may amend the Trust XIV Declaration of Trust without the consent of the holders of the Trust XIV HITS, the property trustee or the Delaware trustee, unless in the case of the first two bullets below such amendment will materially and adversely affect the interests of any holder of Trust XIV HITS or the property trustee or the Delaware trustee, to:

- cure any ambiguity, correct or supplement any provisions in the Trust XIV Declaration of Trust that may be inconsistent with any other provision, or to make any other provisions with respect to matters or questions arising under such Trust XIV Declaration of Trust, which may not be inconsistent with the other provisions of the Trust XIV Declaration of Trust;

- modify, eliminate or add to any provisions of the Trust XIV Declaration of Trust to such extent as shall be necessary to ensure that Trust XIV will be classified for U.S. federal income tax purposes as one or more grantor trusts and/or agency arrangements and not as an association or a publicly traded partnership taxable as a corporation at all times that any Trust XIV securities are outstanding, to ensure that Trust XIV will not be required to register as an "investment company" under the Investment Company Act or to ensure the treatment of Trust XIV HITS as Tier 1 regulatory capital under prevailing Federal Reserve rules and regulations;

- provide that certificates for Trust XIV HITS may be executed by a regular trustee by facsimile signature instead of manual signature, in which case such amendment(s) shall also provide for the appointment by the Company of an authentication agent and certain related provisions;

- require that holders that are not U.S. persons for U.S. federal income tax purposes irrevocably appoint a U.S. person to exercise any voting rights to ensure that Trust XIV will not be treated as a foreign trust for U.S. federal income tax purposes; or

- conform the terms of the Trust XIV Declaration of Trust to the description of the Trust XIV Declaration of Trust, the Trust XIV HITS and the Trust XIV Common Securities in the prospectus supplement relating to the initial offering of the Trust XIV HITS, in the manner provided in the Trust XIV Declaration of Trust.

Any such amendment shall become effective when notice thereof is given to the property trustee, the Delaware Trustee and the holders of the Trust XIV HITS.

The Company and the regular trustees may generally amend the Trust XIV Declaration of Trust with:

- the consent of holders representing not less than a majority, based upon liquidation amounts, of each outstanding class of Trust XIV HITS affected by the amendments; and

- receipt by the trustees of Trust XIV of an opinion of counsel to the effect that such amendment or the exercise of any power granted to the trustees of Trust XIV or the regular trustees in accordance with such amendment will not affect Trust XIV's status as one or more grantor trusts and/or agency arrangements for U.S. federal income tax purposes or affect Trust XIV's exemption from status as an "investment company" under the Investment Company Act.

However, without the consent of each affected holder of Trust XIV securities, the Trust XIV Declaration of Trust may not be amended to:

- change the amount or timing, or otherwise adversely affect the amount, of any distribution required to be made in respect of Trust XIV securities as of a specified date; or

- restrict the right of a holder of Trust XIV securities to institute a suit for the enforcement of any such payment on or after such date.

Series G Preferred Stock. So long as the Series G Preferred Stock is held by the property trustee on behalf of Trust XIV, the trustees of Trust XIV will not waive any default in respect of the Series G Preferred Stock without obtaining the prior approval of the holders of at least a majority in liquidation amount of the Trust XIV HITS then outstanding. The trustees of Trust XIV also shall not consent to any amendment to Trust XIV's or the Company's governing documents that would change the dates on which dividends are payable or the amount of such dividends, without the prior written consent of each holder of Trust XIV HITS. In addition to obtaining the foregoing approvals from holders, the trustees of Trust XIV shall obtain, at the Company's expense, an opinion of counsel to the effect that such action shall not cause Trust XIV to be taxable as a corporation or classified as a partnership for U.S. federal income tax purposes.

General. Any required approval of holders of Trust XIV HITS may be given at a meeting of holders of such class of Trust XIV HITS convened for such purpose or pursuant to written consent. The property trustee will cause a notice of any meeting at which holders of Trust XIV HITS are entitled to vote, or of any matter upon which action by written consent of such holders is to be taken, to be given to each record holder of such Trust XIV HITS in the manner set forth in the Trust XIV Declaration of Trust.

No vote or consent of the holders of Trust XIV HITS will be required for Trust XIV to redeem and cancel the Trust XIV HITS in accordance with the Trust XIV Declaration of Trust.

Notwithstanding that holders of the Trust XIV HITS are entitled to vote or consent under any of the circumstances described above, any of the Trust XIV HITS that are owned by the Company or its affiliates or the trustees or any of their affiliates shall, for purposes of such vote or consent, be treated as if they were not outstanding.

Payment and Paying Agent

Payments on the Trust XIV HITS shall be made to DTC by the paying agent, which shall credit the relevant accounts on the applicable distribution dates. If any Trust XIV HITS are not held by DTC, the paying agent shall make such payments by check mailed to the address of the holder as such address shall appear on the register.

The "paying agent" is The Bank of New York Mellon Trust Company, N.A. (formerly known as The Bank of New York Trust Company, N.A.) and any co-paying agent chosen by the property trustee and acceptable to the Company and to the regular trustees. The paying agent shall be permitted to resign as paying agent upon 30 days written notice to the regular trustees and to the property trustee. In the event that The Bank of New York Trust Company, N.A. shall no longer be the paying agent, the property trustee will appoint a successor to act as paying agent, which will be a bank or trust company acceptable to the regular trustees and to the Company.

Registrar and Transfer Agent

The Bank of New York Mellon Trust Company, N.A. acts registrar and transfer agent for the Trust XIV HITS.

Registration of transfers of Trust XIV HITS will be effected without charge by or on behalf of Trust XIV but after payment of any tax or other governmental charges that may be imposed in connection with any transfer or exchange. Neither Trust XIV nor the transfer agent shall be required to register the transfer of or exchange any trust security during a period beginning at the opening of business 15 days before the day of selection for redemption of Trust XIV securities and ending at the close of business on the day of mailing of notice of redemption or to transfer or exchange any trust security so selected for redemption in whole or in part, except, in the case of any trust security to be redeemed in part, any portion thereof not to be redeemed.

Any Trust XIV HITS can be exchanged for other Trust XIV HITS so long as such other Trust XIV HITS are denominated in authorized denominations and have the same aggregate liquidation amount and same terms as the Trust XIV HITS that were surrendered for exchange. The Trust XIV HITS may be presented for registration of transfer, duly endorsed or accompanied by a satisfactory written instrument of transfer, at the office or agency maintained by the Company for that purpose in a place of payment. There will be no service charge for any registration of transfer or exchange of the Trust XIV HITS, but the Company may require holders to pay any tax or other governmental charge payable in connection with a transfer or exchange of the Trust XIV HITS. The Company may at any time rescind the designation or approve a change in the location of any office or agency, in addition to the security registrar, designated by the Company where holders can surrender the Trust XIV HITS for registration of transfer or exchange. However, Trust XIV will be required to maintain an office or agency in each place of payment for the Trust XIV HITS.

Information Concerning the Property Trustee

Other than during the occurrence and continuance of a Trust Event of Default, the property trustee undertakes to perform only the duties that are specifically set forth in the Trust XIV Declaration of Trust. After a Trust XIV Event of Default, the property trustee must exercise the same degree of care and skill as a prudent individual would exercise or use in the conduct of his or her own affairs. Subject to this provision, the property trustee is under no obligation to exercise any of the powers vested in it by the Trust XIV Declaration of Trust at the request of any holder of Trust XIV HITS unless it is offered indemnity satisfactory to it by such holder against the costs, expenses and liabilities that might be incurred. However, the holders of the Trust XIV HITS will not be required to offer any indemnity if those holders, by exercising their voting rights, direct the property trustee to take any action following an event of default under the Trust XIV Declaration of Trust. If no Trust XIV Event of Default has occurred and is continuing and the property trustee is required to decide between alternative courses of action, construe ambiguous provisions in the Trust XIV Declaration of Trust or is unsure of the application of any provision of the Trust XIV Declaration of Trust, and the matter is not one upon which holders of Trust XIV HITS are entitled under the Trust XIV Declaration of Trust to vote, then the property trustee will take any action that the Company directs. If the Company does not provide direction, the property trustee may take any action that it deems advisable and in the interests of the holders of the Trust XIV securities and will have no liability except for its own bad faith, negligence or willful misconduct.

The Company and certain of its affiliates have from time to time maintained deposit accounts and conducted other banking transactions with the property trustee and its affiliated entities in the ordinary course of business. The Company expects to continue those business transactions. The property trustee or its affiliates also serve as trustee for a number of series of the Company's outstanding indebtedness under other indentures.

Trust Expenses

Pursuant to the Trust XIV Declaration of Trust, the Company, as sponsor, agrees to pay:

- all debts and other obligations of Trust XIV (other than with respect to the Trust XIV HITS);
- all costs and expenses of Trust XIV, including costs and expenses relating to the organization of Trust XIV, the fees and expenses of the trustees and the cost and expenses relating to the operation of Trust XIV; and
- any and all taxes and costs and expenses with respect thereto, other than U.S. withholding taxes, to which Trust XIV might become subject.

Miscellaneous

The regular trustees are authorized and directed to conduct the affairs of and to operate Trust XIV in such a way that it will not be required to register as an "investment company" under the Investment Company Act or characterized as other than one or more grantor trusts and/or agency arrangements for U.S. federal income tax purposes. In this regard, the Company, as sponsor of Trust XIV, and the regular trustees are authorized to take any action, not inconsistent with applicable law, the certificate of trust of Trust XIV or the Trust XIV Declaration of Trust, that the Company and the regular trustees determine to be necessary or desirable to achieve such end, as long as such action does not materially and adversely affect the interests of the holders of the Trust XIV HITS.

Holders of the Trust XIV HITS have no preemptive or similar rights. The Trust XIV HITS are not convertible into or exchangeable for the Company's Common Stock or any series of the Company's preferred stock (including the Series G Preferred Stock).

DESCRIPTION OF INCOME CAPITAL OBLIGATION NOTES INITIALLY DUE DECEMBER 15, 2066

This section describes the Company's Income Capital Obligations Notes initially due December 15, 2066 (the "**ICONs**"). The ICONs are issued under the Junior Subordinated Indenture dated as of December 14, 2006 between the Company (successor by merger to Merrill Lynch & Co., Inc.) and The Bank of New York Mellon (formerly known as The Bank of New York), as trustee (as supplemented, the "**ICONs Indenture**"). The ICONs Indenture is included as an exhibit to the Company's Registration Statement on Form 8-A filed with the SEC on October 18, 2018.

General

The ICONs are unsecured junior subordinated debt securities of the Company. An aggregate principal amount of $1,050,000,000 of the ICONs was outstanding as of December 31, 2022. The ICONs are listed on the NYSE under the symbol "MER PrK". The ICONs are issued in registered book-entry only form, represented by a global security registered in the name of a depository.

Unless the ICONs are redeemed prior to maturity, the ICONs will mature on December 15, 2066 (the "**Initial Scheduled Maturity Date**"), unless the Company extends the maturity of the ICONs as described below.

Interest Rate

The ICONs will bear interest at 6.45% per annum through the Initial Scheduled Maturity Date or any earlier redemption date (the "**Fixed Rate Period**"). Subject to the Company's right to defer interest payments described below, during the Fixed Rate Period interest is payable quarterly in arrears, on March 15, June 15, September 15, and December 15 of each year. If interest payments are deferred or otherwise not paid during the Fixed Rate Period, the interest will accrue and compound until paid at the annual rate of 6.45%. The amount of interest payable for any accrual period during this period will be compounded on the basis of a 360-day year consisting of twelve 30-day months.

If the Company elects to extend the maturity date of the ICONs as described below, the ICONs will bear interest at the Three-Month LIBOR Rate plus 132.7 basis points (1.327%), reset quarterly, during the period commencing on and including December 15, 2066 to, but excluding, the date on which the ICONs mature or any earlier redemption date (the "**Floating Rate Period**"). Subject to the Company's right to defer interest payments as described below, during the Floating Rate Period interest is payable quarterly in arrears on March 15, June 15, September 15 and December 15 of each year, beginning March 15, 2067. If interest payments are deferred or otherwise not paid during the Floating Rate Period, the interest will accrue and compound until paid at the prevailing floating rate. The amount of interest payable for any accrual period during the Floating Rate Period will be computed on the basis of a 360-day year and the actual number of days elapsed during the relevant period.

During the Fixed Rate Period if an interest payment date or a redemption date of the ICONs falls on a day that is not a business day, the payment of interest and principal will be made on the next succeeding business day, and no interest on such payment will accrue for the period from and after the interest payment date or the redemption date, as applicable. During the Floating Rate Period, if any interest payment date, other than a redemption date or the maturity date of the ICONs, falls on a day that is not a business day, the interest payment date will be postponed to the next day that is a business day, except that if that business day is in the next succeeding calendar month, the interest payment date will be the immediately preceding business

day. Also during the Floating Rate Period, if a redemption date or the maturity date of the ICONs falls on a day that is not a business day, the payment of interest and principal will be made on the next succeeding business day, and no interest on such payment will accrue for the period from and after the redemption date or the maturity date, as applicable.

A "**business day**" means any day other than a day on which banking institutions in The City of New York are authorized or required by law to close; provided that, during the Floating Rate Period the day is also a London banking day. "**London banking day**" means a day on which commercial banks are open for business, including dealings in U.S. dollars, in London.

The "**Three-Month LIBOR Rate**" means the rate determined in accordance with the following provisions. On the LIBOR interest determination date, the calculation agent or its affiliate will determine the Three-Month LIBOR Rate which will be the rate for deposits in U.S. Dollars having a three-month maturity which appears on the Telerate Page 3750 as of 11:00 a.m., London time, on the LIBOR interest determination date. If no rate appears on Telerate Page 3750 on the LIBOR interest determination date, the calculation agent or its affiliate will request the principal London offices of four major reference banks in the London Inter-Bank Market to provide it with their offered quotations for deposits in U.S. Dollars for the period of three months, commencing on the applicable interest payment date in the Floating Rate Period, to prime banks in the London Inter-Bank Market at approximately 11:00 a.m., London time, on that LIBOR interest determination date and in a principal amount that is representative for a single transaction in U.S. dollars in that market at that time. If at least two quotations are provided, the Three-Month LIBOR Rate will be the average (rounded, if necessary, to the nearest one hundredth (0.01) of a percent) of those quotations. If fewer than two quotations are provided, then the Three-Month LIBOR Rate will be the average (rounded, if necessary, to the nearest one hundredth (0.01) of a percent) of the rates quoted at approximately 11:00 a.m., New York City time, on the LIBOR interest determinate date by three major banks in New York City selected by the calculation agent or its affiliate for loans in U.S. Dollars to leading European banks, having a three-month maturity and in a principal amount that is representative for a single transaction in U.S. dollars in that market at that time. If the banks selected by the calculation agent or its affiliate are not providing quotations in the manner described by this paragraph, the rate for the quarterly interest period following the LIBOR interest determination date will be the rate in effect on that LIBOR interest determination date.

"**Telerate Page 3750**" means the display designated as "Telerate page 3750" on Moneyline Telerate, Inc. (or such other page as may replace "Telerate page 3750" on such service) or such other service displaying the London Inter-Bank offered rates of major banks, as may replace Moneyline Telerate, Inc.

"**LIBOR interest determination date**" means the second London banking day preceding each interest payment date in the Floating Rate Period.

"**Calculation agent**" means The Bank of New York Mellon, or its successor appointed by the Company, acting as calculation agent.

Interest payable at any interest payment date other than the maturity date will be paid to the registered holder of the ICON on the regular record date for that interest payment date. The principal and interest payable at maturity will be paid to the holder of the ICON at the time of payment by the paying agent.

Maturity; Extension of Maturity

The ICONs do not have a sinking fund. This means that the Company is not required to make any principal payments prior to maturity.

The ICONs will mature on December 15, 2066 unless the Company elects to extend the maturity date as described in the following paragraph.

On December 15, 2026, the Company may, at its sole option, elect to extend the maturity date of the ICONs for an additional ten years. If the Company makes this election, the ICONs will mature on December 15, 2076. The Company will provide irrevocable notice of any such election not less than 30 days, nor more than 60 days, prior to the applicable election date. The Company may make this election to extend the maturity date of the ICONs only if the following conditions are met at the time it provides irrevocable notice of any such election:

- the Company's senior unsecured indebtedness is rated at least Baa1 by Moody's Investors Service, Inc. ("Moody's") or BBB+ by either of Standard & Poor's Ratings Services, a division of McGraw Hill, Inc. ("S&P") or Fitch Ratings ("Fitch") or, if any of Moody's, S&P and Fitch (or their respective successors) is no longer in existence, the equivalent rating by any other nationally recognized statistical rating organization within the meaning of Rule 15c3-1 under the Exchange Act;

- the Company is not deferring the payment of interest on the ICONs pursuant to an Optional Deferral Period (as defined below); and

- the Company is not in default in respect of any of its outstanding indebtedness for money borrowed having an aggregate principal or face amount in excess of $100 million.

Ranking of the ICONs

The Company's payment obligations under the ICONs are unsecured and rank junior and are subordinated in right of payment and upon liquidation to all of its Senior Indebtedness.

"**Senior Indebtedness**" means, with respect to the Company, (i) the principal, premium, if any, and interest in respect of (A) indebtedness for money borrowed and (B) indebtedness evidenced by securities, notes, debentures, bonds or other similar instruments issued by the Company, including without limitation all indebtedness (whether now or hereafter outstanding) issued under the Merrill Lynch & Co., Inc. subordinated indenture, dated as of December 17, 1996, (ii) all capital lease obligations of the Company, (iii) all obligations of the Company issued or assumed as the deferred purchase price of property, all conditional sale obligations of the Company and all obligations of the Company under any conditional sale or title retention agreement (but excluding trade accounts payable in the ordinary course of business), (iv) all obligations, contingent or otherwise, of the Company in respect of any letters of credit, banker's acceptances, security purchase facilities and similar credit transactions, (v) all obligations of the Company in respect of interest rate swap, cap or other agreements, interest rate future or option contracts, currency swap agreements, currency future or option contracts and other similar agreements, (vi) all obligations of the type referred to in clauses (i) through (v) of other persons for the payment of which the Company is responsible or liable as obligor, guarantor or otherwise, and (vii) all obligations of the type referred to in clauses (i) through (vi) of other persons secured by any lien on any property or asset of the Company (whether or not such obligation is assumed by the Company), except that Senior Indebtedness does not include obligations in respect of (1) any indebtedness issued under the ICONs Indenture, (2) any guarantee entered into by the Company in respect of any capital securities issued by any finance subsidiary trust similar to Merrill Lynch Capital Trust I, (3) any indebtedness or any guarantee that is by its terms subordinated to, or ranks equally with, the ICONs and the issuance of which does not at the time of issuance prevent the ICONs from qualifying for tier 1 (or its equivalent for purposes of the capital adequacy guidelines of the applicable regulatory body or governmental authority) capital

treatment (irrespective of any limits on the amount of the Company's tier 1 capital) under applicable capital adequacy guidelines, regulations, policies, published interpretations, or the concurrence or approval of the SEC or any other applicable regulatory body or governmental authority, or (4) trade accounts payable. Upon any payment or distribution of assets to creditors upon the Company's liquidation, dissolution, winding up, reorganization, whether voluntary or involuntary, assignment for the benefit of creditors, marshaling of assets or any bankruptcy, insolvency, debt restructuring or similar proceedings, the holders of Senior Indebtedness will first be entitled to receive payment in full of the principal, premium, or interest due before the holders of ICONs will be entitled to receive any payment or distribution.

In the event of the acceleration of the maturity of any ICONs, the holders of all Senior Indebtedness outstanding at the time of the acceleration will first be entitled to receive payment in full of all amounts due on the Senior Indebtedness (including any amounts due upon acceleration) before the holders of the ICONs.

No payment, by or on the Company's behalf, of principal or interest on the ICONs shall be made if at the time of the payment, there exists:

- a default in any payment on any Senior Indebtedness, or any other default under which the maturity of any Senior Indebtedness has been accelerated; and

- any judicial proceeding relating to the defaults which shall be pending.

At December 31, 2022, the Senior Indebtedness to which the ICONs would rank subordinate includes (but is not limited to) approximately $399 billion of principal, premium, if any, and interest in respect of indebtedness for money borrowed and indebtedness evidenced by securities, notes, debentures, bonds or other similar instruments issued by the Company, on an unconsolidated basis.

Because the Company is a holding company, its right and the rights of its creditors, including the holders of the ICONs, to participate in any distribution of the assets of any subsidiary upon its liquidation or reorganization or otherwise is necessarily subject to the prior claims of creditors of the subsidiary, except to the extent that a bankruptcy court may recognize its claims as a creditor of its subsidiary. In addition, dividends, loans and advances from certain subsidiaries are restricted by net capital requirements under the Exchange Act and under rules of certain exchanges and other regulatory bodies.

The ICONs do not limit the Company's or its subsidiaries' ability to incur additional debt or liabilities, including debt or other liabilities which would rank senior in priority of payment to the ICONs.

Redemption

Subject to obtaining any required regulatory approval, the Company may redeem the ICONs before their maturity in whole or in part, on one or more occasions at any time, at 100% of their principal amount plus accrued and unpaid interest. Notice of any redemption will be given at least 30 days but not more than 60 days before the redemption date to each holder of ICONs at its registered address. The holders of the ICONs do not have any optional redemption rights.

Option to Defer Interest Payments

As long as no event of default that would permit acceleration of the ICONs has occurred and is continuing, the Company can defer quarterly interest payments on the ICONs for one or

more periods (each an "**Optional Deferral Period**") for up to 40 consecutive quarters, or 10 years, if no event of default that would permit acceleration of the ICONs has occurred and is continuing. A deferral of interest payments cannot extend, however, beyond the maturity date of the ICONs. During the Optional Deferral Period, interest will continue to accrue on the ICONs, compounded quarterly, and deferred interest payments will accrue additional interest at the annual interest rate then applicable to the ICONs to the extent permitted by applicable law. No interest will be due and payable on the ICONs until the end of the Optional Deferral Period except upon a redemption of the ICONs during a deferral period.

The Company may pay at any time all or any portion of the interest accrued to that point during an Optional Deferral Period. At the end of the Optional Deferral Period or on any redemption date, the Company will be obligated to pay all accrued and unpaid interest.

Once the Company pays all accrued and unpaid deferred interest on the ICONs, the Company again can defer interest payments on the ICONs as described above, provided that a deferral period cannot extend beyond the maturity date of the ICONs. The Company may pay the accrued and unpaid interest at any time during an Optional Deferral Period.

Certain Limitations During a Deferral Period. During any deferral period, the Company will not and its subsidiaries will not be permitted to:

- declare or pay any dividends or distributions, or redeem, purchase, acquire, or make a liquidation payment on any of the Company's capital stock;

- make any payment of principal of or interest or premium, if any, on or repay, repurchase or redeem any of the Company's debt securities that rank equally with or junior in interest to the ICONs, other than pro rata payments of accrued and unpaid amounts on the ICONs and any other of the Company's debt securities that rank equally with the ICONs; or

- make any guarantee payments on any guarantee by the Company of debt securities of any of its subsidiaries if the guarantee ranks equally with or junior in interest to the guarantee issued in connection with Merrill Lynch Capital Trust I other than pro rata payments of accrued and unpaid amounts on the guarantee and any other of the Company's guarantees of debt securities of its subsidiaries that rank equally with the guarantee.

However, at any time, including during a deferral period, the Company will be permitted to:

- pay dividends or distributions on its capital stock in additional shares of its capital stock;

- declare or pay a dividend in connection with the implementation of a shareholders' rights plan, or issue stock under such a plan or repurchase such rights; and

- purchase Common Stock for issuance pursuant to any employee benefit plans.

Notice. The Company will provide to the trustee written notice of any optional deferral of interest at least ten and not more than 60 business days prior to the applicable interest payment date, and the trustee shall promptly give notice of the election to the holders of the ICONs.

Events of Default and Rights of Acceleration

The ICONs Indenture provides that any one or more of the following events with respect to the ICONs that has occurred and is continuing constitutes an event of default and acceleration:

- default in the payment of interest, including compounded interest, in full on any ICONs for a period of 30 days after the conclusion of a ten-year period following the commencement of any Optional Deferral Period; or

- some events of bankruptcy, insolvency and reorganization involving the Company.

If an event of default and acceleration under the ICONs Indenture of the type described in the first bullet point above has occurred and is continuing, the trustee or the holders of at least 25% in outstanding principal amount of the ICONs will have the right to declare the principal of, and accrued interest (including compounded interest) on, those securities to be due and payable immediately. If the trustee or the holders of at least 25% of the outstanding principal amount of the ICONs fail to make that declaration, then the holders of at least 25% in total liquidation amount of the capital securities then outstanding will have the right to do so. If an event of default and acceleration under the ICONs Indenture arising from events of bankruptcy, insolvency and reorganization involving the Company occurs, the principal of and accrued interest on the ICONs will automatically, and without any declaration or other action on the part of the trustee or any holder of ICONs, become immediately due and payable. In case of any default that is not an event of default and acceleration, there is no right to declare the principal amount of the junior subordinated debt securities immediately payable. The holders of a majority in aggregate principal amount of the ICONs then outstanding, in some circumstances, may annul the declaration of acceleration and waive past defaults.

Modification of ICONs Indenture

The Company and the trustee may change the indenture without the holders' consent for specified purposes, including:

- to fix any ambiguity, defect or inconsistency, provided that the change does not materially adversely affect the interest of any holder of ICONs; and

- to qualify or maintain the qualification of the ICONs Indenture under the Trust Indenture Act.

In addition, under the ICONs Indenture, the Company and the trustee may modify the ICONs Indenture to affect the rights of the holders of the ICONs, with the consent of the holders of a majority in principal amount of the outstanding ICONs that are affected. However, neither the Company nor the trustee may take the following actions without the consent of each holder of the ICONs affected:

- change the maturity date of the ICONs (other than in connection with any election by the Company to extend the maturity of the ICONs in accordance with their terms), or reduce the principal amount, rate of interest, or extend the time of payment of interest;

- reduce the percentage in principal amount of the ICONs necessary to modify the ICONs Indenture;

- modify some provisions of the ICONs Indenture relating to modification or waiver, except to increase the required percentage; or

- modify the provisions of the ICONs Indenture relating to the subordination of the ICONs in a manner adverse to the holders.

Consolidation, Merger, Sale of Assets and Other Transactions

The ICONs Indenture provides that the Company cannot consolidate with or merge into any other person or convey, transfer or lease its properties and assets substantially as an entirety to any person, and no person will consolidate with or merge into the Company or convey, transfer or lease its properties and assets substantially as an entirety to the Company, unless:

- the Company is the continuing entity or the successor is organized under the laws of the United States or any state or the District of Columbia and expressly assumes all of the Company's obligations under the ICONs Indenture;

- immediately after the transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, shall have occurred and be continuing; and

- certain other conditions specified in the ICONs Indenture are met.

Collection of Indebtedness

If the Company fails to pay the principal of or any premium on any securities, or if it is over 30 calendar days late on any interest payment or other amounts payable (other than principal, any premium, or other amounts payable at maturity or upon redemption) on the securities, the trustee can demand that the Company pay to it, for the benefit of the holders of those securities, the amount which is due and payable on those securities, including any interest incurred because of the Company's failure to make that payment. If the Company fails to pay the required amount on demand, the trustee may take appropriate action, including instituting judicial proceedings against the Company.

The holders of a majority of the aggregate outstanding principal amount of the ICONs have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee with respect to the ICONs, but the trustee will be entitled to receive from the holders indemnity reasonably satisfactory to the trustee against expenses and liabilities.

The Company is required periodically to file with the trustee under the ICONs Indenture a certificate stating that the Company is not in default under any of the terms of the ICONs Indenture.

Limitation on Suits

The ICONs Indenture provides that no individual holder of ICONs may institute any action against the Company under the indenture, except actions for the payment of overdue principal, any premium, interest or other amounts due, unless the following actions have occurred:

- the holder must have previously given written notice to the trustee of a continuing event of default;

- the holders of not less than 25% in principal amount of such outstanding securities issued under the ICONs Indenture must have (1) requested the trustee to institute proceedings in respect of such event of default and (2) offered the trustee indemnity against liabilities

incurred by the trustee for taking such action, which indemnity is reasonably satisfactory to the trustee;

- the trustee must have failed to institute proceedings within 60 days after receipt of the request referred to above; and

- the holders of a majority in principal amount of such outstanding ICONs must not have given direction to the trustee inconsistent with the request of the holders referred to above.

However, the holder of any securities will have an absolute right to receive payment of principal of and any premium and interest or other amounts due on the securities when due and to institute suit to enforce this payment.

DESCRIPTION OF SENIOR MEDIUM TERM NOTES, SERIES A, STEP UP CALLABLE NOTES, DUE NOVEMBER 28, 2031 OF BOFA FINANCE LLC (AND THE GUARANTEE OF THE REGISTRANT RELATED THERETO)

This section describes the Senior Medium-Term Notes, Series A, Step Up Callable Notes, due November 28, 2031 (the "Step Up Callable Notes"), issued by BofA Finance LLC ("**BofA Finance**") and guaranteed by the Company. The Step Up Callable Notes were issued under the Indenture dated as of August 23, 2016 among BofA Finance, as issuer, the Company, as guarantor, and The Bank of New York Mellon Trust Company, N.A., as trustee (the "**BofA Finance Indenture**"). The BofA Finance Indenture is filed as an exhibit to the Company's Registration Statement on Form S-3 (File No. 333-213265) filed with the SEC, pursuant to which the Step Up Callable Notes were issued.

Principal Terms of the Step Up Callable Notes

The Step Up Callable Notes are unsecured senior debt securities issued by BofA Finance, which are fully and unconditionally guaranteed by the Company. The Step Up Callable Notes were issued originally on November 28, 2016 in the aggregate principal amount of $5,000,000, all of which is outstanding as of December 31, 2022. The Step Up Callable Notes are listed on the NYSE under the symbol "BAC/31B". The Step Up Callable Notes are issued in registered book-entry only form, represented by a global security registered in the name of a depository.

Unless the Step Up Callable Notes are redeemed prior to maturity, the Step Up Callable Notes will mature on November 28, 2031. The Step Up Callable Notes are not subject to the operation of a sinking fund.

Interest on the Step Up Callable Notes is payable semiannually in arrears, on May 28 and November 28 of each year, with the final interest date occurring on the maturity date. Each interest period (other than the first interest period, which began on the issue date) will begin on, and will include, an interest payment date, and will extend to, but will exclude, the next succeeding interest payment date (or the maturity date, as applicable). Interest on the Step Up Callable Notes is computed and paid on the basis of a 360-day year consisting of twelve 30-day months. The Step Up Callable Notes will accrue interest at the following rates per annum during the indicated periods of their term:

- November 28, 2016 to, but excluding, November 28, 2021: 3.00%
- November 28, 2021 to, but excluding, November 28, 2026: 3.50%
- November 28, 2026 to, but excluding, November 28, 2028: 4.00%
- November 28, 2028 to, but excluding, November 28, 2030: 5.00%
- November 28, 2030 to, but excluding, November 28, 2031: 7.00%

Interest payable at any interest payment date other than the maturity date will be paid to the registered holder of the note on the regular record date for that interest payment date. The principal and interest payable at maturity will be paid to the holder of the note at the time of payment by the paying agent.

BofA Finance has the right to redeem all, but not less than all, of the Step Up Callable Notes on November 28, 2019 and on each subsequent interest payment date (other than the maturity date). The redemption price will be 100% of the principal amount of the Step Up Callable Notes, plus any accrued and unpaid interest. In order to call the Step Up Callable Notes, BofA Finance will give notice at least five business days but not more than 60 calendar days before the specified early redemption date.

If any interest payment date, any early redemption date or the maturity date of the Step Up Callable Notes occurs on a day that is not a business day in New York, New York, then the payment will be postponed until the next business day in New York, New York. No additional interest will accrue on the Step Up Callable Notes as a result of such postponement, and no adjustment will be made to the length of the relevant interest period. As long as the Step Up Callable Notes are held in book-entry only form, the record dates for interest payments on the notes will be one business day in New York, New York prior to the payment date.

The trustee serves as the sole paying agent, security registrar and transfer agent for the Step Up Callable Notes through the trustee's office or agency in Jacksonville, Florida. BofA Finance may rescind the designation of paying agent, appoint a successor or an additional paying agent, or approve a change in the office through which any paying agent acts in accordance with the terms of the BofA Finance Indenture. BofA Finance also may decide to act as its own paying agent, and the paying agent may resign.

The Company and certain of its affiliates have from time to time maintained deposit accounts and conducted other banking transactions with The Bank of New York Mellon Trust Company, N.A. and its affiliates in the ordinary course of business. The Company and its affiliates expect to continue these business transactions. The Bank of New York Mellon Trust Company, N.A. and its affiliates also serve as trustee for a number of series of outstanding indebtedness of the Company and its affiliates under other indentures.

Company Guarantee

The Company has fully and unconditionally guaranteed, on an unsecured basis, the due and punctual payment of the principal of (and premium, if any, on) and any interest and all other amounts payable on the Step Up Callable Notes issued by BofA Finance, when the same becomes due and payable, whether at maturity or upon redemption, repayment or acceleration, in accordance with the terms of the Step Up Callable Notes and the BofA Finance Indenture. If for any reason BofA Finance does not make any required payment on the securities when due, the Company will make such payment, on demand, at the same place and in the same manner that applies to payments made by BofA Finance under the BofA Finance Indenture. The guarantee is of payment and not of collection. The Company's obligations under its guarantee of the securities are unconditional and absolute.

Sale or Issuance of Capital Stock of Principal Subsidiary Banks

The BofA Finance Indenture provides that, subject to the provisions of the BofA Finance Indenture described below relating to the merger or sale of assets of the Company, the Company will not sell, assign, transfer or otherwise dispose of, or permit the issuance of, or permit a subsidiary to sell, assign, transfer or dispose of, any shares of capital stock, or any securities convertible into or options, warrants or rights to acquire capital stock, of any "principal subsidiary bank" (as described below) or of any subsidiary which owns shares of capital stock, or securities convertible into or options, warrants or rights to acquire capital stock, of any principal subsidiary bank, with the following exceptions:

- sales of directors' qualifying shares;
- sales or other dispositions for fair market value, if, after giving effect to the disposition and to conversion of any shares or securities convertible into capital stock of a principal subsidiary bank, the Company would own at least 80% of each class of the capital stock of that principal subsidiary bank;
- sales or other dispositions made in compliance with an order of a court or regulatory authority of competent jurisdiction;
- any sale by a principal subsidiary bank of additional shares of its capital stock, securities convertible into shares of its capital stock, or options, warrants or rights to subscribe for or purchase shares of its capital stock, to its stockholders at any price, so long as before that sale the Company owned, directly or indirectly, securities of the same class and immediately after the sale, the Company owned, directly or indirectly, at least as great a percentage of each class of securities of the principal subsidiary bank as it owned before the sale of additional securities; and
- any issuance of shares of capital stock, or securities convertible into or options, warrants or rights to subscribe for or purchase shares of capital stock, of a principal subsidiary bank or any subsidiary which owns shares of capital stock, or securities convertible into or options, warrants or rights to acquire capital stock, of any principal subsidiary bank, to the Company or its wholly-owned subsidiary.

A "**principal subsidiary bank**" is defined in the BofA Finance Indenture as any bank or trust company subsidiary of the Company that is organized and doing business under any U.S. state or federal law, with total assets equal to more than 10% of the Company's total consolidated assets.

Limitation on Mergers and Sales of Assets

Under the terms of the BofA Finance Indenture, each of BofA Finance and the Company generally is permitted to merge or consolidate with another entity. Each of BofA Finance and the Company also is permitted to sell all or substantially all of its assets. These transactions are permitted if:

- With respect to BofA Finance:
    - the resulting or acquiring entity, if other than BofA Finance, is organized and existing under the laws of the United States or any state or the District of Columbia and expressly assumes all of BofA Finance's obligations under the BofA Finance Indenture and the debt securities issued under the BofA Finance Indenture; and
    - immediately after the transaction, BofA Finance (or any successor entity) is not in default in the performance of any covenant or condition under the BofA Finance Indenture.

- With respect to the Company:
    - the resulting or acquiring entity, if other than the Company, is organized and existing under the laws of the United States or any state or the District of Columbia and expressly assumes the guarantee obligations under the BofA Finance Indenture; and
    - immediately after the transaction, the Company (or any successor guarantor) is not in default in the performance of any covenant or condition under the BofA Finance Indenture.

Upon any consolidation, merger, sale, or transfer of this kind, the resulting or acquiring entity will be substituted for BofA Finance or the Company, as the case may be, in the BofA Finance Indenture with the same effect as if it had been an original party to that indenture. As a result, the successor entity may exercise BofA Finance's or the Company's rights and powers under the BofA Finance Indenture, as the case may be. If BofA Finance were to merge into the Company, under the terms of the BofA Finance Indenture, the guarantee would terminate.

Waiver of Covenants

The holders of a majority in aggregate principal amount of all affected securities then outstanding under the BofA Finance Indenture may waive compliance with some of the covenants or conditions of the BofA Finance Indenture.

Modification of the BofA Finance Indenture

BofA Finance, the Company and the trustee may modify the BofA Finance Indenture and the rights of the holders of the securities with the consent of the holders of not less than a majority of the aggregate principal amount of all outstanding securities under the BofA Finance Indenture affected by the modification. However, no modification may extend the stated maturity of, reduce the principal amount or any premium of, or reduce the rate, or extend the time of payment, of interest on, any security or reduce any amount payable on redemption of any security (except in accordance with the terms of the securities) without the consent of all holders of each outstanding security affected by the modification. No modification may reduce the percentage of securities that is required to consent to modification of the BofA Finance Indenture without the consent of all holders of the securities outstanding under the BofA Finance Indenture.

In addition, BofA Finance, the Company and the trustee may execute supplemental indentures in some circumstances without the consent of any holder of outstanding securities.

For purposes of determining the aggregate principal amount of securities outstanding at any time in connection with any request, demand, authorization, direction, notice, consent or waiver under the BofA Finance Indenture, (1) the principal amount of any security issued with original issue discount is that amount that would be due and payable at that time upon declaration of acceleration following an event of default, and (2) the principal amount of securities denominated in a foreign currency or currency unit is the U.S. dollar equivalent of the security determined as described in the supplement relating to that security.

Meetings and Action by Securityholders

The trustee may call a meeting in its discretion, or upon request by BofA Finance or the holders of at least 10% in principal amount of the outstanding securities affected thereby, by giving notice. If a meeting of holders is duly held, any resolution raised or decision taken in

accordance with the BofA Finance Indenture will be binding on all holders of securities affected thereby.

Events of Default and Rights of Acceleration

Under the BofA Finance Indenture, an event of default for the Step Up Callable Notes includes any one of the following events:

- default in the payment of the principal or any premium when due on the Step Up Callable Notes;
- default in the payment of interest or other amounts due (other than principal, premium, if any, or other amounts payable at maturity or upon redemption) on the Step Up Callable Notes, within 30 calendar days after the interest or other such amounts become due;
- BofA Finance's breach of any of its other covenants in the Step Up Callable Notes or in the BofA Finance Indenture that is not cured within 90 calendar days after written notice to BofA Finance by the trustee, or to BofA Finance and the trustee by the holders of at least 25% in aggregate principal amount of all securities then outstanding under the BofA Finance Indenture and affected by the breach; or
- specified events involving BofA Finance's bankruptcy, insolvency, or liquidation.

If an event of default occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of the securities outstanding under the BofA Finance Indenture and affected by such event of default (or, in the case of an event of default under the BofA Finance Indenture relating to specified events involving BofA Finance's bankruptcy, insolvency, or liquidation, the holders of 25% in principal amount of all outstanding securities) may declare the principal amount, or, if the securities are issued with original issue discount, a specified portion of the principal amount, of all affected securities (or all securities, as the case may be) to be due and payable immediately. The holders of a majority in aggregate principal amount of the affected securities then outstanding, in some circumstances, may annul the declaration of acceleration and waive past defaults.

Collection of Indebtedness

If BofA Finance fails to pay the principal of or any premium on any securities, or if it is over 30 calendar days late on any interest payment or other amounts payable (other than principal, any premium, or other amounts payable at maturity or upon redemption) on the securities, the trustee can demand that BofA Finance pay to it, for the benefit of the holders of those securities, the amount which is due and payable on those securities, including any interest incurred because of BofA Finance's failure to make that payment. If BofA Finance fails to pay the required amount on demand, the trustee may take appropriate action, including instituting judicial proceedings against BofA Finance.

In addition, a holder of a security also may file suit to enforce BofA Finance's obligations to make payment of principal, any premium, interest, or other amounts due on that security regardless of the actions taken by the trustee.

The holders of a majority in principal amount of the affected securities then outstanding under the BofA Finance Indenture may direct the time, method and place of conducting any proceeding for any remedy available to the trustee under the BofA Finance Indenture, but the trustee will be entitled to receive from the holders indemnity reasonably satisfactory to the trustee against expenses and liabilities.

BofA Finance and the Company are required periodically to file with the trustee under the BofA Finance Indenture a certificate stating that BofA Finance or the Company, as the case may be, is not in default under any of the terms of the BofA Finance Indenture.

Limitation on Suits

The BofA Finance Indenture provides that no individual holder of securities of any series may institute any action against BofA Finance under the indenture, except actions for the payment of overdue principal, any premium, interest or other amounts due, unless the following actions have occurred:

- the holder must have previously given written notice to the trustee of a continuing event of default;
- the holders of not less than 25% in principal amount of such outstanding securities issued under the BofA Finance Indenture must have (1) requested the trustee to institute proceedings in respect of such event of default and (2) offered the trustee indemnity against liabilities incurred by the trustee for taking such action, which indemnity is reasonably satisfactory to the trustee;
- the trustee must have failed to institute proceedings within 60 days after receipt of the request referred to above; and
- the holders of a majority in principal amount of such outstanding securities issued under the BofA Finance Indenture must not have given direction to the trustee inconsistent with the request of the holders referred to above.

However, the holder of any securities will have an absolute right to receive payment of principal of and any premium and interest or other amounts due on the securities when due and to institute suit to enforce this payment.

BANK OF AMERICA

Exhibit 10.62

Certain identified information has been redacted from this exhibit because it is both (i) not material and (ii) a type that the registrant treats as private or confidential. Information that has been omitted has been identified in this document with a placeholder identified by the mark "*[***]*."

Bank of America Europe Designated Activity Company
Two Park Place, Hatch Street, Dublin 2, Ireland
T +353 (0)1 243 8500 | F+353 (0)1 243 8501

01/12/2022

Mr. Paul Donofrio
[***]

Dear Paul,

Letter of Appointment

The Board of Directors (the "**Board**") of Bank of America Europe Designated Activity Company (the "**Company**" or "**BofA Europe**") is pleased that you have accepted our offer to join the Board as the Chair and a Non-Executive director. Schedule 1 of this letter sets out the conditions to which this offer is subject and explains what you need to do if you wish to formally accept.

This letter sets out the main terms of your offer. It is agreed between us that when formally accepted, this will be a contract for services and will not be a contract of employment.

By accepting this appointment, you confirm that you are not subject to any restrictions which prevent you from holding office as a director.

1. APPOINTMENT

1.1 Subject to the remaining provisions of this letter, your appointment as Non-Executive director commenced on the date of regulatory approval, 1 December 2022, for a term of one year, unless terminated by either party giving the other one month's prior written notice (or, at the Company's discretion, by making a payment of the appropriate pro rata fee in lieu of such notice). Your appointment as Chair of the Board of BofA Europe will commence on 1 January 2023. The Board may invite you to serve for an additional period. Should the Board do so, this letter of appointment will automatically renew for such further period of appointment as approved by the Board and the term specified in this paragraph 1.1 shall be deemed to be extended accordingly.

1.2 Your appointment is subject to the articles of association of the Company, as amended from time to time (the **"Articles"**). Nothing in this letter shall be taken to exclude or vary the terms of the Articles as they apply to you as a director of the Company.

Bank of America Europe Designated Activity Company is registered in Ireland. Registered Office: Two Park Place, Hatch Street, Dublin 2, Ireland. Registered No.: 229165. VAT No. IE 8229165F. A wholly owned subsidiary of Bank of America Corporation. A list of names and personal details of every director of the company is available for inspection to the public at the company's registered office for a nominal fee. Bank of America Europe Designated Activity Company is regulated by the Central Bank of Ireland.

1.3 Your appointment is also subject to all applicable laws or regulations, including, without limitation, the Companies Act 2014. If any term of this letter should conflict or be inconsistent with any applicable laws or regulations, then the applicable laws or regulations shall prevail.

1.4 Notwithstanding the above paragraphs the Company may terminate your appointment with immediate effect:

(a) if you have committed any serious or repeated breach or non-observance of your obligations to the Company (which include an obligation not to breach your statutory, fiduciary, or common-law duties); or

(b) if you have not complied with the Company's anti-corruption and bribery policy and procedures and/or the Prevention of Corruption Acts 1889 – 2010 as amended from time to time; or

(c) if you have been guilty of any fraud or dishonesty or acted in any manner or engaged in any conduct which, in the opinion of the Company, brings or is likely to bring you or the Company into disrepute or is materially adverse to the interests of the Company whether or not connected with your engagement hereunder; or

(d) if you have been declared bankrupt or have made an arrangement with or for the benefit of your creditors; or

(e) if you have been restricted or disqualified from acting as a director; or

(f) if the Company determines that it is or may at any time be unable to satisfy itself that you are fit and proper for whatever reason; or

(g) immediately in the event that your status as a Pre-Approval Control Function ("**PCF**") in respect of the Company is withdrawn for any reason at any time: or

(h) if you fail to satisfy at the sole discretion of the Company any of the conditions contained within this appointment letter.

1.5 On the termination of your appointment as a director (howsoever arising), you shall only be entitled to accrued fees as at the date of termination together with reimbursement of any reasonable and documented expenses properly incurred prior to that date.

1.6 On the termination of your appointment, you shall cease to hold yourself out as in any way connected with the Company thereafter and observe the duty of confidentiality set out in paragraph 7 of this letter notwithstanding such termination.

2. TIME COMMITMENT

2.1 From the date of your appointment under the terms of this letter, you will be required to devote such time as is necessary for you to properly perform your duties, normally including chairing a minimum of six board meetings (which may be more frequent, where required),

and attendance at other committee meetings as required. In addition, you will be required to consider all relevant papers prior to each meeting.

2.2 By accepting this appointment, you confirm that you are able to allocate sufficient time to meet the expectations of your role. Should you not be able to commit to the required time (as stated in clause 2.1), you will inform the Company immediately. For avoidance of doubt, the Company reserves the right at its absolute discretion to determine the number of directorships held at any one time.

3. ROLE AND DUTIES

3.1 As a non-executive director you shall have the same general legal responsibilities to the Company as any other director. The Board as a whole is collectively responsible for the affairs of the Company. The Board's role is to:

(a) provide leadership of the Company within a framework of prudent and effective controls which enable risk to be assessed and managed;

(b) set the Company's strategic aims, ensure that the necessary financial and human resources are in place for the Company to meet its objectives, and review management performance; and

(c) set the Company's values and standards and ensure that its obligations to its shareholders and others are understood and met.

3.2 All directors must act in the way they consider, in good faith, in the interests of the Company as a whole. In doing so, as a director, you must have regard (among other matters) to:

(a) the likely consequences of any decision in the long term;

(b) the interests of the Company's employees;

(c) the need to foster the Company's business relationships with suppliers, customers and others;

(d) the impact of the Company's operations on the community and the environment;

(e) the desirability of the Company maintaining a reputation for high standards of business conduct; and

(f) the need to act fairly as between the members of the Company.

3.3 In your role as Chair and a non-executive director, you shall also be required to:

(a) lead the Board of the Company;

(b) encourage critical discussion and challenge mindsets;

(c) promote effective communication between executive and non-executive directors;

(d) attend and chair board meetings;

(e) constructively challenge and contribute to the development of strategy;

(f) scrutinise the performance of management in meeting agreed goals and objectives and monitor the reporting of performance;

(g) satisfy yourself that financial information is accurate and that financial controls and systems of risk management are robust and defensible;

(h) have a role in appointments and in succession planning, where applicable;

(i) at all times comply with the Articles of the Company;

(j) abide by your statutory, fiduciary or common-law duties as a director of the Company, including any duties or obligations which are or which may be imposed by relevant regulatory authorities from time to time;

(k) diligently perform your duties and use your best endeavours to promote, protect, develop and extend the business of the Company;

(l) immediately report your own wrongdoing or the wrongdoing or proposed wrongdoing of any employee or other director of the Company of which you become aware to the Head of Compliance of the Company; and

(m) inform the Company Secretary if you intend to take on any additional directorships other than those already noted.

3.4 You represent and warrant to the Company that you are not engaged in, or currently intending to engage in, any lawsuit or other legal or administrative proceedings or arbitration which would adversely affect, in any material respect, your ability to perform your obligations hereunder and to the best of your knowledge, information and belief, no such litigation or arbitration is pending or threatened against you.

3.5 You shall be entitled to request relevant information about the Company's affairs as is reasonably necessary in order to enable you to discharge your duties.

4. FEES

From the date of your appointment as non-executive director and Chair, you shall be paid annual fees totalling one hundred sixty thousand euro (€160,000) in respect of your appointments, €100,000 (one hundred thousand euro) of which is attributable to your role as non-executive director of the Company and €60,000 (sixty thousand euro) of which is attributable to your role as Chair of the Board. These annual fees will be prorated for the portion of the calendar year in which you are appointed to the Board as a non-executive director and the calendar year you are appointed as Chair, respectively, and shall be paid in equal instalments monthly in arrears after deduction of any taxes and other amounts that are required by law. The Company shall reimburse you for all reasonable and properly documented expenses that you incur in performing the duties of your office.

5. INDEPENDENT LEGAL ADVICE

In some circumstances you may consider that you need professional advice in the furtherance of your duties as a director and it may be appropriate for you to seek advice from independent advisors at the Company's expense. In these circumstances you should notify the General Counsel, EMEA in advance of seeking advice so that it can be discussed whether it is appropriate to obtain such advice and the procedure for doing so.

6. OUTSIDE INTERESTS

6.1 It is accepted and acknowledged that you have business interests other than those of the Company and have declared any conflicts that are apparent at present. If you become aware of any potential conflicts of interest, these should be disclosed to the Chief Executive Officer and Company Secretary as soon as you become aware of them and you should isolate yourself from decision-making on any matter on which there is a conflict.

6.2 During your appointment you will not without the prior written consent of the Company, which shall not be unreasonably withheld, undertake any additional directorship appointments or other business or work activity that may conflict with your appointment with the Company. In considering whether to give consent the Company reserves the right at its reasonable discretion to determine what types of activities may be in conflict. Any questions, clarification or doubts regarding other activities by you and potential conflict must be raised with the Company. You also acknowledge and agree that the prior approval of the CBI (and other relevant regulatory authorities) will be required prior to you taking on any other directorships (other than directorships within the Company's group).

7. CONFIDENTIALITY

7.1 All information acquired prior to and during your appointment is confidential to the Company and should not be disclosed to third parties or used for any reason other than in the interests of the Company, either before, during or following termination of your appointment (by whatever means), without prior written clearance from the Chief Executive Officer or the Company Secretary.

7.2 Your attention is also drawn to the requirements under both legislation and regulation as to the disclosure of inside information. Consequently, you should avoid making any statements that might risk a breach of these requirements without prior clearance from the Chief Executive Officer or the Company Secretary.

7.3 In line with local regulations and the Bank of America Code of Conduct, the Company acts in compliance with the Ireland Whistleblowing Policy, which sets out the preferred procedure for whistleblowing. Under Irish rules Pre-Approval Controlled Functions ("**PCFs**") are required to report certain types of misconduct to the CBI including: (i) information relating to breaches of financial services legislation; or (ii) the destruction or concealment of relevant evidence related to such breaches. The affirmative obligations on PCFs to

disclose this information to the CBI applies except where: (i) the report would lead to self-incrimination; or (ii) where the information has already been disclosed to the CBI. Failure by a PCF to disclose such contraventions could result in an investigation by the CBI into the PCF.

8. REVIEW PROCESS

The performance of individual directors and the whole Board is evaluated annually. If, in the interim, there are any matters which cause you concern about your role you should discuss them with the Chair of the Nominations Committee as soon as possible.

9. INDEMNITY

The details of your right to indemnification as a director of the Company are contained in Article VIII of the bylaws of the Bank of America Corporation, a copy of which you have already been provided with. The Company routinely receives requests from regulatory authorities to provide information in relation to their inquiries and should you become the subject of or party to any investigation by the CBI or any other regulatory authority, the Company has policies and processes in place to collate and safeguard any documentation held by the Company that it may be required to produce and will provide such additional support and assistance as is reasonable in all the circumstances, subject to any applicable legal or regulatory duties.

10. INSURANCE

The Company has directors' and officers' liability insurance and it intends to maintain such cover for the full term of your appointment. You will be notified on each renewal date that the policy has been renewed and advised of any material change in coverage.

11. THIRD PARTY RIGHTS

No person other than you and the Company shall have any rights under this letter and the terms of this letter shall not be enforceable by any person other than you and the Company.

12. MISCELLANEOUS

12.1 Your appointment with the Company and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the laws of Ireland and you and the Company irrevocably agree that the courts of Ireland shall have non-exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with this appointment or its subject matter or formation (including non-contractual disputes or claims).

12.2 This letter constitutes the entire terms and conditions of your appointment and supersedes all previous discussions, correspondence, negotiations, arrangements, understandings and agreements between you and the Company relating to its subject matter.

Please indicate your acceptance of these terms by signing and returning one copy of this letter to Sarah McGuinness, Company Secretary, at Bank of America Europe, *[***]*, Ireland.

Yours sincerely

/s/ Jennifer Becker
.....

Jennifer Becker, Head of International Human Resources

For and on behalf of Bank of America Europe Designated Activity Company

I agree to the above terms of appointment as Chair and a Non-Executive Director.

/s/ Paul Donofrio
……

Paul Donofrio
Chair and Non-Executive Director

23 January 2023
Signed on .....

Schedule 1
Conditions of the offer

Conditions of this offer are that:

1. You sign and return all required documentation as set out in this Schedule;
2. You are able to provide evidence of your right to work and remain in Ireland, in accordance with legal requirements, if required;
3. You will comply with Bank of America Corporation policies and any other Company procedures and policies that may apply to non-executive directors from time to time; and
4. You also meet any further requirements as stated in this Schedule and the letter of appointment.

We reserve the right to withdraw this offer if any of the above conditions are not met.

If, as we hope, you wish to accept the offer, you will need to sign and return one copy of this letter.

Non-Executive Director Data Protection Notice

NON-EXECUTIVE DIRECTOR DATA PROTECTION NOTICE

I. INTRODUCTION

The legal entity named in the letter of appointment of the Non-Executive Director (collectively, the "Bank") have prepared this Non-Executive Director Data Protection Notice ("Notice") to outline its practices regarding the collection, use, storage, transfer and other processing of individually identifiable information about Non-Executive Directors ("Personal Data For the purposes of this Notice, "individually identifiable information" means information regarding an identified or identifiable Non-Executive Director. For the purposes of this Notice, "Non-Executive Director" means any member of the board of directors of any Bank entity who is not an employee of the Bank or its affiliates and has no executive responsibilities for the Bank or its affiliates. The Bank also may provide to Non-Executive Directors additional data protection or privacy notices from time to time.

In the event this Notice is provided to a Non-Executive Director in a language other than English, any discrepancy, conflict or inconsistency between the two language versions shall be resolved in favour of the English version, subject to applicable law.

II. PERSONAL DATA COLLECTION AND PURPOSES OF USE

Best practice and the effective running of our business require the Bank to collect, use, store, transfer and otherwise process certain Personal Data.

The Bank collects Personal Data that is directly relevant to its business, required to meet its legal obligations, or otherwise permissible to collect under applicable laws. Listed in Appendix A of this Notice are the categories of Personal Data that we collect and the purposes for which we use the data that we collect except where restricted by applicable law. We receive Personal Data from you and from other sources, such as referees and background check providers, and public sources.

We collect and process Personal Data about you: (i) because we are required or permitted to do so by local applicable law, (ii) because such information is necessary to perform any contract between you and the Bank, fulfil your appointment and to facilitate your relationship with the Bank, (iii) because such information is of particular importance to us and we have a specific legitimate interest under law to process it , (iv) where a public interest requires it, (v) where the Personal Data is necessary for the establishment, exercise or defence of legal claims, or (vi) where necessary to protect the vital interests of you or another person.

Where necessary, we obtain your consent for collection and processing of Personal Data.

If you do not provide certain categories of Personal Data, the Bank may not be able to accomplish some of the purposes outlined in this Notice and the issue may need to be escalated to Human Resources and Corporate Secretary to deal with as appropriate.

SENSITIVE PERSONAL DATA

The Bank may collect and process certain special categories of Personal Data ("Sensitive Personal Data") about Non-Executive Directors where required by applicable law, where necessary for the establishment, exercise or defence of legal claims, or, where necessary, the Non-Executive Director has provided explicit consent. Subject to applicable law, the Bank may process information about:

- physical and/or mental health in order to address workplace health, safety and accommodation issues and to monitor absences and fitness for the role
- racial or ethnic origin or religious or similar beliefs in order to monitor compliance with equal opportunities legislation
- information relating to any criminal proceedings in which you have been involved for insurance purposes and in order to comply with legal requirements and obligations to third parties
- biometric data, such as fingerprints and iris scans, for the purposes of electronic identification, authentication and corporate security, at secured Bank premises

PERSONAL DATA ABOUT FAMILY AND DEPENDENTS

If a Non-Executive Director provides the Bank with Personal Data about members of his/her family and/or other dependents (e.g., for emergency contact), it is the Non-Executive Director's responsibility to inform such individuals of their rights (see Section VII) and to obtain their explicit consent, where necessary, to the processing (including transfer) of that Personal Data as set out in this Notice.

III. COOKIES

Non-essential and essential cookies are collected on some websites and mobile applications that the Bank uses. Please refer to the following policy.

IV. ACCESS BY BANK PERSONNEL

Where permitted by law, access to Personal Data is restricted to those individuals who need such access for the purposes listed in Appendix A, including but not limited to members of the Human Resources Department and to authorised representatives of the Bank's internal control functions such as Corporate Secretary, Compliance, Chief Administrative Office, Information Security, Corporate Security, Audit and Legal. Access may also be granted on a strict need-to-know basis to others where permitted by law.

V. DISCLOSURE

To the extent permitted by applicable law and as appropriate to achieve the purposes described in this Notice, Personal Data may be disclosed by the Bank as follows:

Given the global nature of the Bank's activities, the Bank may (subject to applicable law) transmit for the purposes described in this Notice Personal Data, including Sensitive Personal Data, to other

Bank of America affiliates or operations located in the United States or other jurisdictions where data protection laws may not provide an equivalent level of protection to the laws in the Non- Executive Director's home jurisdiction. The affiliates belonging to the Bank of America Corporation group are listed at the link below. The listing is available upon request if you do not have access to the internal site: *[***]*

The Bank may disclose in accordance with applicable law relevant Personal Data to certain third parties in connection with the provision of services to the Bank. Where the processing of Personal Data is delegated to a third party data processor, such as those listed in Appendix A, the Bank will delegate such processing in writing, will choose a data processor that provides sufficient guarantees with respect to technical and organisational security measures, such as data protection and information security requirements, governing the relevant processing and will ensure that the processor acts on the Bank's behalf and under the Bank's instructions.

Personal Data also may be disclosed, where permitted by applicable law, in connection with a corporate restructuring, sale, or assignment of assets, merger, divestiture, or other changes of the financial status of the Bank or any of its subsidiary or affiliated companies. Personal Data also may be released to protect the vital interests of Non-Executive Directors, to protect the legitimate interests of the Bank (unless this would prejudice the rights and freedoms or interests of the Non- Executive Director), or in the Bank's judgement to comply with applicable legal or regulatory obligations and regulatory inquiries or requests.

VI. SECURITY

The Bank maintains appropriate technical and organisational measures designed to protect against unauthorised or unlawful processing of Personal Data and/or against accidental loss, alteration, disclosure or access, or accidental or unlawful destruction of or damage to Personal Data.

VII. ACCESS, PORTABILITY, RECTIFICATION AND SUPRESSION, LIMITATION AND RESTRICTION OF PROCESSING AND ACCURACY OF PERSONAL DATA

Non-Executive Directors are entitled to access Personal Data held about them (with the exception of any documents that are subject to legal privilege, that provide Personal Data about other individuals such as other directors or any Employees, or that otherwise are not subject to data subject access rights). Any Non-Executive Director who wishes to access his/her Personal Data or (where permitted under applicable law) request portability of their data should contact a member of the Human Resources Department or Corporate Secretary using the contact information set out in Section IX below.

To the extent required by applicable law, Non-Executive Directors have the right to have inaccurate data corrected or removed (at no charge to the Non-Executive Director and at any time) or to limit or restrict processing of their data.

To assist the Bank in maintaining accurate Personal Data, Non-Executive Directors must ensure they provide the Bank with updated Personal Data. In the event that the Bank becomes aware of any inaccuracy in the Personal Data it has recorded, it will correct that inaccuracy at the earliest practical opportunity.

To the extent available under applicable law, Non-Executive Directors may also have the following rights (including but not limited to):

- to request a copy of Personal Data held by the Bank (as part of an access request above);
- to request further information or complain about the Bank's practices and processes regarding their Personal Data;
- to object to, withdraw consent to, restrict, or request discontinuance of collection, use, disclosure and other processing of their Personal Data as described in this Notice and to request deletion of such Personal Data by the Bank.

For all inquiries, Non-Executive Directors should contact a member of the Human Resources Department or Corporate Secretary using the contact information set out in Section IX below. Under applicable law, in certain circumstances, the Bank may be exempt from or entitled to refuse the above requests or rights. Certain additional terms and conditions may be applicable to process requests or rights, such as requiring communications to be in writing or requiring proof of identity.

VIII. MODALITIES OF THE PROCESSING AND DATA RETENTION

The Bank does not use automated decision making on Non-Executive Director processes. 'Automated decision-making' is the process of making a decision by automated means without any human involvement.

Collection, use, disclosure, transfer and other processing, including storage, of Personal Data may be by electronic or manual means, including by hard-copy or soft-copy documents or other appropriate technology. Personal Data may be stored in a Non-Executive Director's home jurisdiction and/or other jurisdictions in which the Bank has operations.

The Bank will maintain Personal Data for as long as it is required to do so by applicable law(s) or for as long as necessary for the purpose(s) of use and processing in Section II, whichever is longer. Any maximum storage term set forth by applicable law will prevail. The Bank will delete Personal Data after the applicable retention period.

The criteria used to determine our retention periods include:

- As long as we have an ongoing relationship with you;
- As required by a legal obligation to which we are subject;
- As advisable in light of our legal position (such as in regard of applicable statutes of limitations, litigation, or regulatory investigations).

IX. QUESTIONS

Should any Non-Executive Director have any questions, concerns or complaints about this Notice, please contact:

- For EMEA: Human Resources Service Center by phone at *[***]* or *[***]*
- For APAC: *[***]*

In certain countries, if you have additional queries about the way in which the Bank processes your Personal Data more broadly you may contact the local Data Protection Officer using the following contact details:

EMEA Region	*[***]*
APAC Jurisdictions	*[***]*

You may have the right to lodge a complaint with the Data Protection authority for your country.

X. CHANGES TO THIS NOTICE

Should the Bank substantially modify the manner in which it collects or uses Personal Data, the type of Personal Data it collects or any other aspect of this Notice, it will notify Non-Executive Directors as soon as reasonably possible by reissuing a revised Notice or taking other steps in accordance with applicable laws including obtaining Non-Executive Director consent where required.

EMEA & Hong Kong

Acknowledgement of the Notice

I have read the "Non-Executive Director Data Protection Notice" dated January 2018 describing the collection, processing and use of my Personal Data, including Sensitive Personal Data, by the Bank, and the international transfer of my Personal Data to jurisdictions where data protection laws may not provide an equivalent level of protection to the laws of my home jurisdiction) during the course of my appointment as a Non-Executive Director.

Please refer to instructions for how to acknowledge the Notice.

APAC
Consent to the Notice

I have read the "Non-Executive Director Data Protection Notice" dated January 2018 describing the collection, processing and use of my Personal Data, including Sensitive Personal Data, by the Bank, and the international transfer of my Personal Data to jurisdictions where data protection laws may not provide an equivalent level of protection to the laws of my home jurisdiction) during the course of my appointment as a Non-Executive Director. I understand its contents and expressly and voluntarily consent to the application of its terms during the course of my appointment.

I also confirm that I have duly provided my family members and dependents (if any) with all information regarding the processing of their Personal Data and their related rights, as described in the Notice and that I have obtained the explicit consent of those individuals, where necessary, to the processing of their Personal Data.

Please sign below to indicate your consent to the Notice.

Paul M. Donofrio
Name

/s/ Paul M. Donofrio
Signature

23 January 2023
Date

13. APPENDIX A

The Categories of Personal Data We May Collect, Use, Transfer And Disclose:

- **Personal Demographic Information:** Date and place of birth; gender; name (including birth surname and any other former names); family/marital status
- **Visa/ Citizenship Details:** Passport details; Nationality; Resident details; National ID
- **Primary Address:** Service address; home address and past addresses; telephone and email
- **Emergency contact details**: name, address, telephone number
- **Appointment and Position Information:** Occupation; Appointment Letter; Biography; pre-appointment references; post-appointment references
- **Payroll:** Social insurance number or other tax identifier number; bank account details; tax and social security contributions; payroll payments and deductions and other financial information; Tax forms e.g. P60 (UK)
- **Expenses administration**
- **Global Mobility***:* Business travel information (including business visa details and travel logs and itineraries)
- **Absence Data:** Absence details e.g. sickness
- **Physical Security and Life Safety Data:** Swipe card entry data; CCTV; photograph (Security ID Card); Accident and Incident Reporting; Biometrics
- **Compensation:** Compensation information
- **Education and Training:** Academic Record, Professional Qualifications and Memberships; professional training; Bank internal training
- **Regulatory Data (where applicable):** Licenses and certifications; financial regulatory registration
- **Technical information:** Including username and passwords, IP address, domain, browser type, operating system, click-stream data and system logs) and electronic and non-electronic content and documents created or produced by you using Bank systems or in the performance of your role with the Bank
- **Securities and Stock Trading:** Details of outside business activities and directorship(s) (appointments held, external appointments and past appointments)
- **Sensitive Personal Data:** (e.g. physical health, criminal charges/convictions)

The Purposes For Which We May Collect, Use, Transfer And Disclose Personal Data:

- **Administering and managing the Non-Executive Director relationship, general administration and budgeting**
- **Authentication/identification of Non-Executive Directors** (e.g. for help desk)
- **Information technology and information security support** (including firewall monitoring, anti-spam and virus protection, and other monitoring, for example in accordance with the Bank's regional Cyber Security Monitoring Notices)
- **Management of internal business operations** (including monitoring compliance with Bank policies and procedures, for example in accordance with the Bank's regional Cyber Security Monitoring Notices)

- **Complying with applicable government reporting and other local and foreign law requirements** (including the requirements of the US Sarbanes-Oxley Act or other applicable internal control regulations and in such areas as immigration, tax or statutory financial regulation) and other legal obligations
- **Payroll and compensation management, administration and processing**
- **Complying with local or foreign state and/or country specific tax and immigration laws and regulations and payroll reporting,** not limited to but including business travel
- **Training and advice purposes**
- **Defending, preparing for, participating in and responding to potential legal claims, investigations and regulatory inquiries** (all as allowed by applicable law)
- **Managing relationships with third parties** (including licensing and registration bodies, legal counsel, stock exchanges, or business counterparties)
- **Post-Non-Executive Director appointment purposes** (for example, providing Non-Executive Director references, and any of the purposes listed above that may be applicable during the post-appointment period).

The Categories Of Unaffiliated Third Parties With Whom We May Share Personal Information

- **Professional Advisors:** Accountants, auditors, lawyers, insurers, bankers, tax advisors and other outside professional advisors in all of the countries in which the Bank operates.
- **Service Providers:** Companies that provide products and services to the Bank in the countries in which the Bank operates, such as payroll, training, expense management, IT systems suppliers and support; reception and security, catering and logistics services providers, translation services, third parties assisting with event organizing and marketing activities, medical or health practitioners, trade bodies and associations, and other service providers.
- **Public and Governmental Authorities:** Entities that regulate or have jurisdiction over the Bank in the countries in which the Bank operates, such as regulatory authorities, law enforcement, public bodies, licensing and registration bodies, judicial bodies and third parties appointed by such authorities.
- **Parties Related to a Corporate Transaction:** A third party in connection with any proposed or actual reorganization, merger, sale, joint venture, assignment, transfer or other disposition of all or any portion of the Bank's business, assets or stock (including in connection with any bankruptcy or similar proceedings), e.g., stock exchanges and business counterparties.

Exhibit 21

Direct and Indirect Subsidiaries of Bank of America Corporation
As of December 31, 2022

Name	Location	Jurisdiction
BA Continuum India Private Limited	Hyderabad, India	India
BA Electronic Data Processing (Guangzhou) Ltd.	Guangzhou, PRC	People's Republic of China
BAC Canada Finance Company	Toronto, Ontario, Canada	Canada
BAC North America Holding Company	Charlotte, NC	Delaware
BAL Investment & Advisory Inc.	San Francisco, CA	Delaware
Banc of America FSC Holdings, Inc.	San Francisco, CA	Delaware
Banc of America Leasing & Capital, LLC	San Francisco, CA	Delaware
Banc of America Securities Asia Limited	Hong Kong, PRC	Hong Kong
Bank of America California, National Association	San Francisco, CA	United States of America
Bank of America Custodial Services (Ireland) Limited	Dublin, Ireland	Ireland
Bank of America Europe Designated Activity Company	Dublin, Ireland	Ireland
Bank of America Malaysia Berhad	Kuala Lumpur, Malaysia	Malaysia
Bank of America Merrill Lynch Banco Múltiplo S.A.	Sao Paulo, Brazil	Brazil
Bank of America Mexico, S.A., Institucion de Banca Multiple	Mexico City, Mexico	Mexico
Bank of America, National Association	Charlotte, NC	United States of America
Bank of America Singapore Limited	Singapore, Singapore	Singapore
Bank of America Yatirim Bank A.S.	Istanbul, Turkey	Turkey
BankAmerica International Financial Corporation	San Francisco, CA	United States of America
Blue Ridge Investments, L.L.C.	Charlotte, NC	Delaware
BofA Finance LLC	Charlotte, NC	Delaware
BofA Securities Europe SA	Paris, France	France
BofA Securities, Inc.	New York, NY	Delaware
BofA Securities India Limited	Mumbai, India	India
BofA Securities Japan Co., Ltd.	Tokyo, Japan	Japan
BofA Securities Prime, Inc.	New York, NY	Delaware
Countrywide Financial Corporation	Calabasas, CA	Delaware
Countrywide Home Loans, Inc.	Calabasas, CA	New York
Managed Account Advisors LLC	Jersey City, NJ	Delaware
Merrill Lynch (Asia Pacific) Limited	Hong Kong, PRC	Hong Kong
Merrill Lynch (Australia) Futures Limited	Sydney, Australia	Australia
Merrill Lynch (Singapore) Pte. Ltd.	Singapore, Singapore	Singapore
Merrill Lynch Argentina S.A.	Capital Federal, Argentina	Argentina
Merrill Lynch B.V.	Amsterdam, Netherlands	Netherlands
Merrill Lynch Bank and Trust Company (Cayman) Limited	George Town, Grand Cayman, Cayman Is.	Cayman Islands
Merrill Lynch Canada Inc.	Toronto, Ontario, Canada	Canada
Merrill Lynch Capital Services, Inc.	New York, NY	Delaware
Merrill Lynch Commodities Canada, ULC	Toronto, Ontario, Canada	Canada
Merrill Lynch Commodities, Inc.	Houston, TX	Delaware
Merrill Lynch Corredores de Bolsa SpA	Santiago, Chile	Chile
Merrill Lynch Credit Reinsurance Limited	Hamilton, Bermuda	Bermuda
Merrill Lynch Derivative Products AG	Zurich, Switzerland	Switzerland
Merrill Lynch Equities (Australia) Limited	Sydney, Australia	Australia
Merrill Lynch Far East Limited	Hong Kong, PRC	Hong Kong
Merrill Lynch Global Services Pte. Ltd.	Singapore, Singapore	Singapore
Merrill Lynch International	London, U.K.	United Kingdom
Merrill Lynch International & Co. C.V.	Curacao, Netherlands Antilles	Curacao
Merrill Lynch International, LLC	New York, NY	Delaware
Merrill Lynch Israel Ltd.	Tel Aviv, Israel	Israel
Merrill Lynch, Kingdom of Saudi Arabia Company	Kingdom of Saudi Arabia	Saudi Arabia
Merrill Lynch Malaysian Advisory Sdn. Bhd.	Kuala Lumpur, Malaysia	Malaysia
Merrill Lynch Markets (Australia) Pty. Limited	Sydney, Australia	Australia
Merrill Lynch Mexico, S.A. de C.V., Casa de Bolsa	Mexico City, Mexico	Mexico
Merrill Lynch, Pierce, Fenner & Smith Incorporated	New York, NY	Delaware
Merrill Lynch Professional Clearing Corp.	New York, NY	Delaware
Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários	Sao Paulo, Brazil	Brazil
Merrill Lynch Securities (Taiwan) Ltd.	Taipei, Taiwan	Taiwan
Merrill Lynch Securities (Thailand) Limited	Bangkok, Thailand	Thailand
Merrill Lynch South Africa Proprietary Limited	Gauteng, South Africa	South Africa
ML UK Capital Holdings Limited	London, U.K.	United Kingdom
Mortgages 1 Limited	London, U.K.	United Kingdom
Mortgages plc	London, U.K.	United Kingdom
NB Holdings Corporation	Charlotte, NC	Delaware
PT Merrill Lynch Sekuritas Indonesia	Jakarta, Indonesia	Indonesia
U.S. Trust Company of Delaware	Wilmington, DE	Delaware
Wave Lending Limited	London, U.K.	United Kingdom

Pursuant to Item 601(b)(21)(ii) of Regulation S-K, the names of certain other subsidiaries of Bank of America Corporation are omitted. These subsidiaries, considered in the aggregate, would not constitute a "significant subsidiary" under SEC rules.

Subsidiary Issuers of Guaranteed Securities

The finance subsidiaries of Bank of America Corporation ("BAC") identified in the table below, have issued (and, in the case of BofA Finance LLC ("BofA Finance"), from time to time may issue) the securities listed opposite each such subsidiary issuer in the table below. BAC has fully and unconditionally guaranteed (or effectively provided for the full and unconditional guarantee of) all such securities:

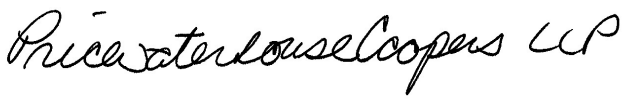
Subsidiary Issuer	Guaranteed Securities
BofA Finance, a consolidated finance subsidiary	Senior Debt Securities issued under the Registration Statements on Form S-3 of BAC and BofA Finance (Registration Nos. 333-234425, 333-213265-01 and 333-268718-01) under the Securities Act of 1933, as amended.
BAC Capital Trust XIII, a 100% owned finance subsidiary	Floating Rate Preferred Hybrid Income Term Securities
BAC Capital Trust XIV, a 100% owned finance subsidiary	5.63% Fixed to Floating Rate Preferred Hybrid Income Term Securities
BAC Capital Trust XV, a 100% owned finance subsidiary	Floating Rate Capital Securities

† Includes securities that have been issued/outstanding and may no longer be subject to requirements of Regulation S-X Rules 3-10 and 13-01

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-268718 and 333-257399) and on Form S-8 (Nos. 333-212376; 333-204453; 333-167797; 333-157085; 333-133566; 333-121513; 333-102043; 333-234780; 333-231107; 333-251608; and 333-256008) of Bank of America Corporation of our report dated February 22, 2023 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.



Charlotte, North Carolina
February 22, 2023

Exhibit 24

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each of the several undersigned officers and directors whose signatures appear below, hereby makes, constitutes and appoints Lauren A. Mogensen and Ross E. Jeffries, Jr., and each of them acting individually, his or her true and lawful attorneys with power to act without any other and with full power of substitution, to prepare, execute, deliver and file in his or her name and on his or her behalf, and in each of the undersigned officer's and director's capacity or capacities as shown below, an Annual Report on Form 10-K for the year ended December 31, 2022, and all exhibits thereto and all documents in support thereof or supplemental thereto, and any and all amendments or supplements to the foregoing, hereby ratifying and confirming all acts and things which said attorneys or attorney might do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, each of the undersigned officers and directors, in the capacity or capacities noted, has hereunto set his or her hand as of the date indicated below.

Signature	Title	Date
/s/ Brian T. Moynihan Brian T. Moynihan	Chief Executive Officer, President, Chair and Director (Principal Executive Officer)	February 1, 2023
/s/ Alastair M. Borthwick Alastair M. Borthwick	Chief Financial Officer (Principal Financial Officer)	February 14, 2023
/s/ Rudolf A. Bless Rudolf A. Bless	Chief Accounting Officer (Principal Accounting Officer)	February 14, 2023
/s/ Sharon L. Allen Sharon L. Allen	Director	February 1, 2023
/s/ José E. Almeida José E. Almeida	Director	February 1, 2023
/s/ Frank P. Bramble, Sr. Frank P. Bramble, Sr.	Director	February 18, 2023
/s/ Pierre J.P. de Weck Pierre J.P. de Weck	Director	February 1, 2023
/s/ Arnold W. Donald Arnold W. Donald	Director	February 1, 2023
/s/ Linda P. Hudson Linda P. Hudson	Director	February 1, 2023
/s/ Monica C. Lozano Monica C. Lozano	Director	February 1, 2023

/s/ Lionel L. Nowell III Lionel L. Nowell III	Director	February 1, 2023
/s/ Denise L. Ramos Denise L. Ramos	Director	February 1, 2023
/s/ Clayton S. Rose Dr. Clayton S. Rose	Director	February 1, 2023
/s/ Michael D. White Michael D. White	Director	February 1, 2023
/s/ Thomas D. Woods Thomas D. Woods	Director	February 1, 2023
/s/ R. David Yost R. David Yost	Director	February 1, 2023
/s/ Maria T. Zuber Dr. Maria T. Zuber	Director	February 1, 2023

Exhibit 99.1

BANK OF AMERICA CORPORATION
CORPORATE POLICY REGARDING SEEKING

STOCKHOLDER APPROVAL OF FUTURE SEVERANCE AGREEMENTS

1. Policy Statement: It shall be the policy of the Board to seek Stockholder Approval for Future Severance Agreements with Senior Executives that provide Severance Benefits in an amount exceeding the Severance Benefit Limitation.

2. Definitions: As used in this Policy Statement the following terms shall have the following meanings:

"Accrued Benefits" means compensation and benefits earned, accrued or otherwise provided for employment services rendered through the date of termination of employment (e.g., pro rata bonus, accrued vacation, accrued retirement benefits, etc.) or any post-termination benefits provided under plans, programs or arrangements of the Corporation applicable to one or more groups of employees in addition to the Senior Executives (e.g., retiree medical). In that regard, "Accrued Benefits" includes any sign-on bonus paid to an executive intended to attract the executive to the Corporation (whether payable in the form of cash or property, such as shares of the Corporation's common stock), regardless of whether there is any potential repayment obligation related to such sign-on bonus.

"Base Salary" means:

(i) with respect to an Employment Agreement, the annual rate of base salary payable from time to time to the Senior Executive pursuant to such Employment Agreement, and

(ii) with respect to a Severance Agreement, the annual rate of base salary payable to the Senior Executive immediately prior to the effective date of such Severance Agreement.

"Board" means the Board of Directors of the Corporation.

"Bonus" means the greater of (i) the highest Total Annual Incentive Award actually awarded to the Senior Executive by the Corporation for any of the three (3) fiscal years of the Corporation immediately preceding the fiscal year in which the Senior Executive's termination of employment occurs, or (ii) the "target" Total Annual Incentive Award for such Senior Executive for the fiscal year in which the Senior Executive's termination of employment occurs.

"Corporation" means Bank of America Corporation, a Delaware corporation.

"Effective Date" means April 24, 2002, the effective date of this Policy Statement.

"Employment Agreement" means an agreement between the Corporation (or one of its subsidiaries) and a Senior Executive pursuant to which the Senior Executive renders services to the Corporation (or one of its subsidiaries) as an employee (and not as a consultant or other independent contractor). For purposes of this definition, a person shall be considered a Senior Executive if the person is a Senior Executive for the year that the agreement is entered into or if the person will be a Senior Executive for the immediately following year.

"Future Severance Agreement" means an Employment Agreement or Severance Agreement entered into after the Effective Date providing for Severance Benefits to a Senior Executive, and includes any renewal, modification or extension made after the Effective Date to an Employment Agreement or Severance Agreement that is in effect as of the Effective Date.

"Permitted Equity Vesting" means the accelerated vesting pursuant to a Future Severance Agreement related to:

(i) any equity award that was outstanding as of the Effective Date, or

(ii) any equity award granted after the Effective Date to the extent it would have vested during the twenty-four (24) month period following the Senior Executive's termination of employment.

"Senior Executive" means an executive officer of the Corporation whose compensation is reported in an annual proxy statement of the Corporation furnished to the stockholders of the Corporation after the Effective Date.

"Severance Agreement" means an agreement between the Corporation (or one of its subsidiaries) and a Senior Executive related to such Senior Executive's termination of employment with the Corporation and its subsidiaries. For purposes of this definition, a person shall be considered a Senior Executive if the person is a Senior Executive for the year that the agreement is entered into or if the person was a Senior Executive for the immediately preceding year. A Severance Agreement does not include an agreement for future services to be rendered to the Corporation (e.g., consulting arrangements) or an agreement to refrain from certain conduct (e.g., covenants not to compete, covenants not to solicit, etc.)

"Severance Benefits" means and includes (i) severance benefits payable in cash (including cash amounts payable for the uncompleted portion of an Employment Agreement), (ii) the value of special benefits or perquisites provided to a Senior Executive for periods following termination of employment, and (iii) the value of any accelerated vesting of any outstanding equity award in connection with the termination of such Senior Executive's employment other than any Permitted Equity Vesting. The term "Severance Benefits" does not include any Accrued Benefits.

"Severance Benefit Limitation" means, with respect to a Senior Executive, two (2) times the sum of such Senior Executive's Base Salary and Bonus. Whether the Severance Benefits provided under an Employment Agreement exceed the Severance Benefit Limitation shall be determined by ascertaining whether the Severance Benefits payable to a Senior Executive at any time following

termination of employment would exceed the Severance Benefit Limitation. Whether the Severance Benefits provided under a Severance Agreement exceed the Severance Benefit Limitation shall be determined by ascertaining whether the Severance Benefits payable to a Senior Executive under such Severance Agreement exceed the Severance Benefit Limitation. If a Senior Executive enters into more than one Future Severance Agreement (e.g., both an Employment Agreement and a Severance Agreement), the Severance Benefit Limitation shall be applied against the aggregate Severance Benefits payable under all such agreements.

"Stockholder Approval" means, with respect to a Future Severance Agreement, the approval by the affirmative vote of a majority of the votes represented by the aggregate of all of the shares of Common Stock, Series B Preferred Stock and ESOP Preferred Stock of the Corporation cast with respect to such Future Severance Agreement at a duly convened meeting of the stockholders of the Corporation.

"Total Annual Incentive Award" means the total annual incentive awarded to a Senior Executive for a fiscal year of the Corporation, including the portion immediately payable in cash (whether or not any portion of such amount is deferred under any qualified or non-qualified deferred compensation plan of the Corporation) and, if applicable, the portion payable in the form of restricted stock or restricted stock units.

3. Valuations. The determinations of the value of non-cash items, as well as the present value of any cash or non-cash benefits payable over a period of time, shall be determined by the Board in its sole discretion using commercially reasonable valuation techniques and principles.

4. Examples:

Example A: The Board determines that it is in the best interest of the Corporation and its stockholders to enter into "change in control agreements" with the Senior Executives after the Effective

Date. Upon a Senior Executive's qualifying termination of employment following the occurrence of a "change in control," Severance Benefits would be payable that exceed the Severance Benefit Limitation. These agreements would constitute Future Severance Agreements for purposes of this Policy Statement. Under the Policy Statement, the Corporation would condition such change in control agreements on Stockholder Approval.

Example B: The Corporation enters into an agreement and plan of merger with XYZ Corporation after the Effective Date. Under the terms of the transaction the chief executive officer of XYZ Corporation would become a Senior Executive of the Corporation on the effective date of the merger (because the executive's compensation will be reported in the Corporation's proxy for the year in which the merger is effective or the following year). The proposed employment agreement with the chief executive officer of XYZ Corporation would have a term of five years and provides that in the event the chief executive officer's employment with the Corporation is terminated "without cause" or the chief executive officer terminates employment with the Corporation for "good reason" during the term, then the chief executive officer would be entitled to collect the Base Salary and Bonus amounts provided for in the employment agreement for the remainder of the employment agreement term. This employment agreement would constitute a Future Severance Agreement for purposes of this Policy Statement. Because it would be possible for Severance Benefits to be paid in an amount more than the Severance Benefit Limitation, the Corporation would condition the agreement on Stockholder Approval.

Example C: The Corporation recruits an executive laterally from another organization after the Effective Date and enters into an employment agreement that annually "renews" for one-year terms which could, under certain circumstances, provide Severance Benefits following a qualifying termination of employment in excess of the Severance Benefit Limitation. The executive is not a Senior Executive (because the executive's compensation is not reported in the Corporation's proxy for the year

in which the executive is hired or the following year). This employment agreement would not be subject to Stockholder Approval because it is entered into with an executive who is not a Senior Executive.

Example D: Same facts as Example C above except that five years after initial employment the executive is promoted and becomes a Senior Executive of the Corporation. The terms and conditions of the executive's original employment agreement remain in effect. The original employment agreement would not be subject to Stockholder Approval under the Policy Statement because at the time the original employment agreement was entered the executive was not a Senior Executive of the Corporation.

Example E: The Corporation desires to laterally recruit a high-level executive from a competitive financial services organization after the Effective Date. The executive would be a Senior Executive of the Corporation upon initial employment (because the executive's compensation will be reported in the Corporation's proxy for the year in which the executive is hired or the following year). Under the terms of a two-year employment agreement entered into with the executive, the executive receives (i) a guaranteed level of Base Salary and Bonus for a period of two years, (ii) a "sign-on bonus" intended to compensate for benefits with the executive's current employer that would be forfeited upon the executive's separation from service, (iii) a supplemental retirement arrangement under which the executive accrues a certain retirement income benefit for each year of service rendered, and (iv) certain equity awards that have vesting schedules associated with them in excess of the two-year term of the agreement but which provide for full vesting upon the executive's termination of employment "without cause" to the extent the awards would have vested during the twenty-four (24) month period following termination of employment. The Board determines at the time the employment agreement is entered into that the Severance Benefits provided by the agreement do not exceed the Severance Benefit Limitation because (i) the guaranteed Base Salary and Bonus could not result in the payment of Severance

Benefits in excess of the Severance Benefit Limitation and (ii) the other elements of the agreement would not constitute Severance Benefits under the Policy Statement. Specifically, the sign-on bonus and benefits accrued under the supplemental retirement arrangement would constitute Accrued Benefits, and any additional vesting of the equity awards would constitute Permitted Equity Vesting. Accordingly, the employment agreement would not be submitted for Stockholder Approval.

5. Reservation of Right to Amend. The Board reserves the right to amend this Policy Statement from time to time in its sole discretion.