BANK OF AMERICA

Coming together in new ways



Annual Report 2020

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A letter from Chairman and CEO Brian Moynihan

To our shareholders and clients,

To my teammates,

To leaders and partners in the communities we serve across the U.S. and around the world,

I hope this finds you safe and well.

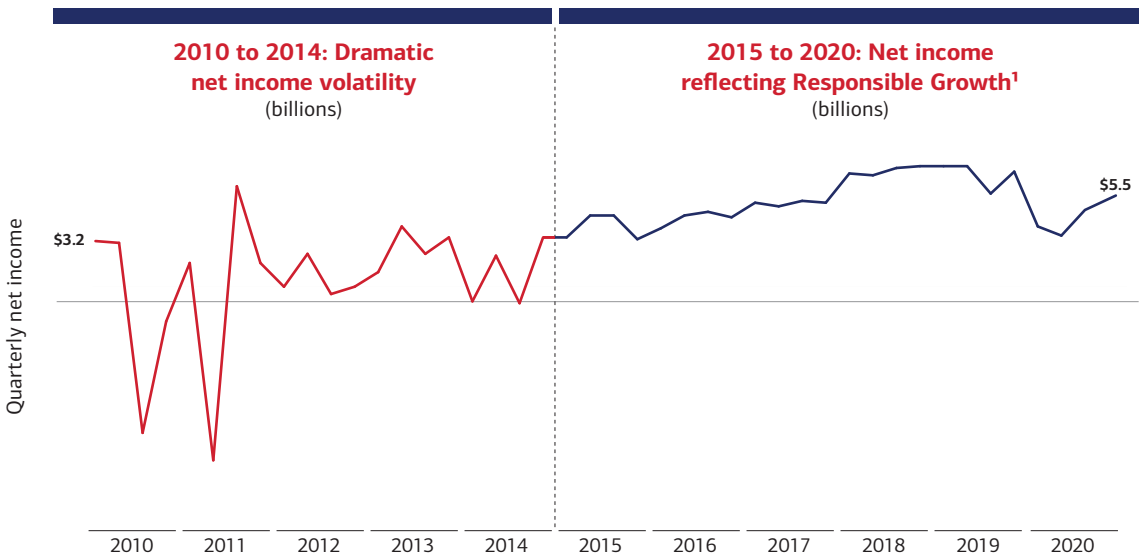
It is my pleasure to share with you the 2020 Bank of America Annual Report. Our report documents how your company responded to the impacts — both humanitarian and financial — of the global health crisis. It describes how we responded to the social and racial justice issues that moved to the forefront in 2020. The pages also tell the story of how our company came together in new ways to deliver for our shareholders, our teammates, our clients, our communities *and* to help address society's biggest challenges.

I begin this letter by thanking my 213,000 teammates and our senior management team. I thank them for their extraordinary efforts over the past 12 months, and for everything they do to support our clients, and each other, every day.

I would also like to thank our Board of Directors for their leadership and guidance throughout 2020. In particular, I would like to extend my gratitude to our outgoing Lead Independent Director, Jack Bovender, for all he has done for our company and those we serve. As we announced in September 2020, Lionel Nowell III takes over this important role. Lionel is an experienced leader and has been a valued member of our Board for the past eight years. **Jack and Lionel share their perspectives on the past year, and what lies ahead, on page 11.**

Looking at our 2020 results, one thing is clear: Our decade-long focus on Responsible Growth prepared us well for this crisis. It allowed us to be a source of stability for our customers and clients during challenging times, to continue supporting the communities in which we work and live and deliver more consistent results for our shareholders through a well-understood risk framework. You can see the impact of Responsible Growth in the chart below.

Despite the impacts of the global health crisis, which resulted in a historically low interest rate



[1] 4Q 2017 net income of $5.3B represents a non-GAAP financial measure. GAAP net income of $2.4B excludes $2.9B related to the adoption of the Tax Cuts and Jobs Act.

environment and a period of market volatility, your company earned $17.9 billion in net income, or $1.87 per share. Moreover, we ended 2020 with more capital, more deposits, record liquidity and improved capital ratios. We did this while increasing support for our clients.

In March of 2020, the stock price for banks in general saw a sharp drop as the health crisis unfolded and investors contemplated potentially large credit losses and revenue declines from interest rates and a paucity of economic activity. From those lows, bank stocks made a steady recovery as fears moderated, ending the year modestly down from the start of the year.

Our stock price declined 49% in March from the beginning of 2020 and then saw a 68% recovery, ending the year down 14%. This was in line with the broader bank index but below the broader market rise of 16%. Despite the 2020 decline, our stock price has outperformed the broader bank index on a 3-year and 5-year basis. As we prepare to issue this report in late February 2021, the price is up 14% this year, reflecting the improved economic outlook.

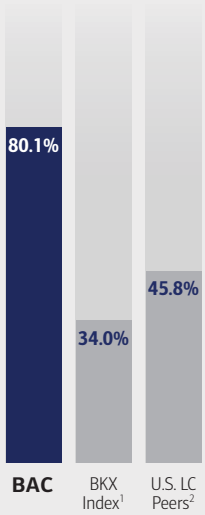
During 2020, we delivered $12 billion in capital back to shareholders through dividends and net share repurchases. We did this even as we halted share repurchases late in the first quarter of 2020 in line with additional federal bank regulatory restrictions. We have resumed share repurchases in the first quarter of 2021 from a position of strength with $36 billion of capital above our minimum regulatory requirements.

Our results in 2020 built onto a solid foundation established by focusing on Responsible Growth for the past decade. We have a strong balance sheet, a best-in-class suite of products and capabilities — including our industry-leading digital capabilities — and a global team of dedicated professionals that is second to none. We are well-positioned to continue delivering for our shareholders, and all those we serve, in 2021 and beyond.

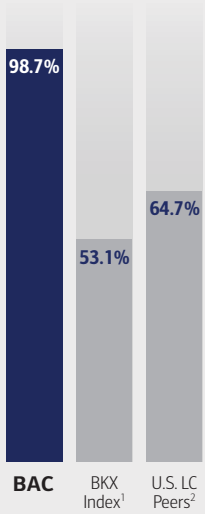
We believe we must continue to deliver these strong results *and* help make progress on important societal priorities. That is core to how we run our business and drive Responsible Growth.

In 2020, we also continued to make meaningful progress on important issues that affect us all. During the year, we accelerated our longstanding work to promote racial equality and economic opportunity, with a $1 billion, four-year commitment aimed at supporting jobs, healthcare, housing and businesses. While we were pleased to see commitments being made by other companies and organizations, we have moved quickly to get money moving to our priority areas of focus. So far, we have invested in jobs and skills training at 11 historically Black colleges and universities and 11 community colleges. We have delivered over 20 million masks and other personal protective equipment (PPE) to

5-year stock performance



5-year total shareholder return



[1] The BKX Index consists of 24 stocks selected from the largest U.S. regional and nationwide banking companies.

[2] Total shareholder return includes stock price appreciation and dividends paid. U.S. Large Cap (LC) Peers include JPM, C, WFC, GS and MS.



Brian Moynihan
Chairman and CEO

community partners, nonprofits, and other venues. We have invested in 14 Minority Depository Institutions (MDIs) to help them grow and serve their communities. We have increased our overall commitment to Community Development Financial Institutions (CDFIs) to $1.7 billion — making Bank of America the largest private sector CDFI funder. And, we have agreed to invest in 61 minority-owned or -focused venture capital or private equity funds in communities around the U.S., which will deliver more equity into thousands of minority-owned small businesses. **You can find out more about our commitment to racial equality and economic opportunity on page 33.**

We also continued to support the transition to a low-carbon, sustainable economy, through our operations, our business activities and our partnerships. This includes our commitment to a goal of achieving net-zero carbon emissions by 2050.

Responsible Growth

There are four pillars to Responsible Growth.

- We must grow in the market, no excuses.
- We must grow with a customer focus.
- We must grow within our risk framework.
- We must grow in a sustainable manner.

I'll discuss each of these in turn, and the ways our team in 2020 delivered on these pillars.

Grow in the market, no excuses

What could we do in an economy to help our clients and grow?

We supported our clients in lockdown with our various customer assistance programs. We supported small businesses with Paycheck Protection Program (PPP) loans. We supported wealth management clients with advice, expertise and execution in

volatile markets. We supported commercial clients with our strong balance sheet that provided more than $70 billion in loans in a few-week period, and raised $772 billion in capital over the course of the year. For institutional investors, it meant having the market expertise and insights, trading capabilities and access to enable them to navigate through.

But we believe it was our planning and investments over the past decade that made this all work. We supplied needed capital and liquidity to borrowers. Our investments in digital client interfaces across our client groups allowed us to maintain a close relationship with our clients, as they moved seamlessly to digital check deposits, payments, banking and investing. On the commercial side, we had invested in our CashPro application, which allowed our clients to safely and securely move billions of dollars every day. We used automated signature capabilities to allow clients to complete estate plans, borrow or invest — all with the same security as doing it in person. With institutional investors, we moved quickly to supply liquidity and a strong and resilient platform to support their activities and help assure stability of the financial system.

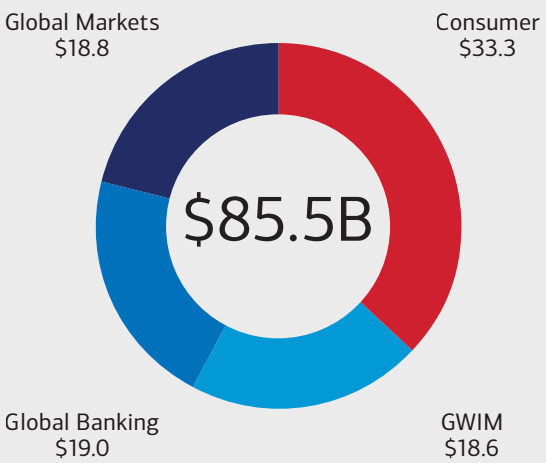
All of this, and more, allowed us to continue to serve clients relatively uninterrupted by the pandemic, even as volumes surged. We played our part, with our industry colleagues, in helping ensure economies around the world, and here in the U.S., recover more quickly. In the end, that is the role of the bank. Your company executed that role well.

And we grew.

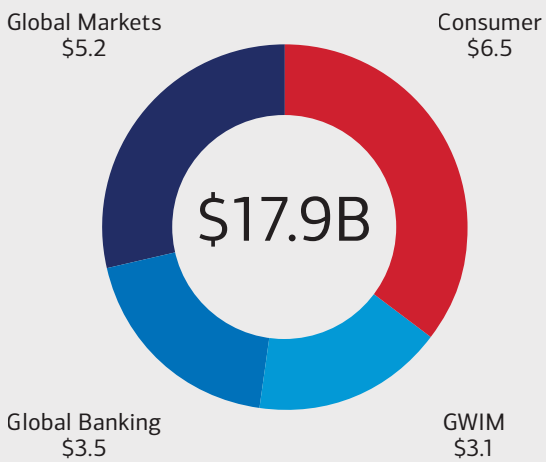
In 2020, average deposits increased 18% year-over-year to approximately $1.6 trillion. In Consumer Banking, we added $115 billion in average deposits during the year, cementing our position as the #1 bank in the U.S. by retail deposits. We leveraged our leading digital capabilities to serve our consumer clients how, when and where they chose to bank with us. Across all consumer sales in 2020, 42% of sales came through digital channels.

During the year, we also enrolled more than one million clients into our flagship loyalty program, Preferred Rewards, driving total membership to 7.2 million. Preferred Rewards recognizes

Revenue[1,2] FY2020
(billions)



Net income[3] FY2020
(billions)



Note: Amounts may not total due to rounding.
[1] Business segment results are reported on a fully taxable-equivalent (FTE) basis with remaining operations recorded in All Other with revenue of ($3.6B).
[2] Total revenue, net of interest expense, on a GAAP basis is $85.5B and $86.0B on an FTE basis, a non-GAAP financial measure. The FTE adjustment is $499M.
[3] Net Income of $17.9B includes a net loss of $407M in All Other.

and rewards clients for their entire relationship with us, and we continue to see 99% retention rates from our members.

We brought our top retail bank brand to new markets in the U.S., including markets in Ohio and Utah, while building our presence in existing markets. According to our internal research, we continued to gain share in key markets. In 25 of the top 30 markets across America — representing over half of the U.S. population — we now hold the #1, #2 or #3 position. That is twice as many markets as our closest peer and includes 14 markets in which we hold the #1 position.

During the year, our wealth management team found new ways to connect with, and deliver for, our Merrill and Private Bank clients. **On page 22, we take a closer look at how our advisors continued to support clients and helped them navigate a changing environment.** We added roughly 22,000 Merrill and 1,800 Private Bank relationships in 2020, and ended the year with client balances at all-time highs of $3.3 trillion.

For the companies we serve, we begin with our small business clients. Apart from the role we played as the largest lender in the federal government's PPP by number of loans, we also continued as the largest small business lender in the country overall, ending the year with more than $32 billion in small business loan balances. We also deployed our new merchant services capabilities.

For our commercial clients, the year was difficult as they had to absorb massive changes to the business cycle brought by the health crisis. We were there for them. Early in the year, we supported their borrowing rush as they sought liquidity in February, March and April. As conditions stabilized, we helped with market access for them to raise needed and permanent capital. We continued to bring digital capabilities to ensure their businesses could run smoothly, even in a work-from-home environment. The results for us were a surge in loans to these businesses. We peaked at $585 billion in commercial loans; by year-end those were down to $499 billion.

Our investment banking team recorded $7 billion in total investment banking fees and posted three of the strongest investment banking quarters in our history. Our performance in this business helped us gain market share and retain the #3 market position, thanks to the efforts of our talented team. **Matthew Koder, President of Global Corporate & Investment Banking, looks back on his team's accomplishments on page 20.**

In Global Markets, full-year sales and trading revenue for 2020 increased 18% year-over-year to $15 billion. During the year we continued to push our innovative capabilities in electronic trading forward to help win mindshare with some of our largest clients. At the same time, our own research team was again ranked as one of the top Global Research Firms by Institutional Investor—placing as one of the top two firms for each of the past 10 years. **You can read more about our award-winning research capabilities on page 23.**

Each of our businesses contributed to our results, and the diversity of our offerings served us well through a dynamic market environment. It will continue to serve us well as we look forward.

Grow by focusing on our clients

Last year, thanks to the commitment of our teammates, the strength of our platform and our focus on Responsible Growth, we achieved the highest client satisfaction scores in company history. That is a credit to each and every member of our global team, who work hard to serve our customers and clients — and exceed their expectations — in every interaction.

In 2020, that included far-ranging measures to support those impacted by the health crisis, through our own relief programs and those provided by the federal government. We processed approximately 2 million payment deferral requests as part of our Client Assistance Program. We processed more than 16 million Economic Impact Payments (EIP), totaling more than $26 billion in the initial round of U.S. government stimulus payments — and continued processing additional payments following subsequent relief legislation.

As the largest PPP lender by number of PPP loans in the first three rounds of the program, in 2020 we helped more than 343,000 small business clients — in every industry, every market — receive PPP loans, delivering more than $25 billion in PPP loan funds to businesses in need. We began accepting applications for PPP loans once again in January 2021, in line with a new round of federal PPP lending. Once again, we are among the top lenders in the program.

At the same time, we remained focused on supporting the everyday financial needs of millions of clients. With additional health and safety measures in place, our teams continued to serve individuals and businesses across our nationwide network of approximately 4,300 financial centers and 17,000 ATMs. I'd like to offer a special thanks to my teammates in the financial centers who have played an essential role for our clients and communities through this health crisis.

Not surprisingly, we also saw a growing number of clients choose to connect with us digitally during 2020. Our ten-plus years of sustained investment into technology — such as

39.3M

digital customers
at year-end, up 3% over 2019

artificial intelligence (AI) — and our award-winning digital platforms ensured we could continue to serve our clients when they needed us most.

In Consumer Banking, we ended 2020 with 39.3 million digital customers, up 3% over 2019. They connected with us nearly 11 billion times. Our roughly 13 million active Zelle® users, both consumers and small businesses, sent approximately $141 billion in transfers in 2020. To put that into perspective, that's almost 50% of the payments made by our 38 million consumers and small businesses using their credit cards.

More than 17 million of our digital banking clients use Erica®, our AI-based virtual financial assistant, to do everything from checking their balances to paying their bills. Erica will also reach out to help if, for example, a client's balance is at risk of going below $0 in the next week, or if a merchant charges them twice. Erica continues to gain knowledge and evolve in response to client needs. For example, at the beginning of the health crisis, Erica learned 60,000 new pandemic-related intents in a matter of days. In 2020 alone, Erica completed 135 million client requests.

In September, we launched LifePlan®, which gives clients the power to select what's most important to them and receive personalized insights — through both high-tech and high-touch interactions — to help them achieve their financial needs and goals. By the end of 2020, our clients had created more than 2 million plans, one of the fastest product rollouts in our history.

Our digital platforms also allow us to extend further into our communities, allowing millions of clients to access services and connect into the broader economy. In 2020, we added Balance Assist™, a low-cost, digital-only alternative to payday-type loans. Balance Assist, which allows clients to borrow up to $500 for a $5 flat fee, joins our existing suite of safe banking solutions, including SafeBalance™ and Secured Card. **D. Steve Boland, President of Retail, joins Aron Levine, President of Preferred and Consumer Banking & Investments, to discuss how these products can help provide financial freedom and stability for clients on page 18.**

$1B

In 2020, our team generated more than 1,700 ideas to drive operational excellence, **saving the company nearly $1 billion.**

Digital connectivity was also fundamental to our success in wealth management, and we saw digital engagement for wealth management clients climb to record levels. By the end of 2020, 77% of Merrill Lynch households and Private Bank clients were using online or mobile banking. Our digital platforms also allowed for effective advisor-client communications, which became a critical part of relationship building as the pandemic continued.

In Global Banking, our CashPro® platform helped more CFOs and other business leaders efficiently and securely manage their cash flow from their offices and homes—and on their mobile devices. Our roughly 500,000 CashPro users drove a 40% increase in platform sign-ins in 2020. Here, too, we applied the power of AI for our clients, digitally matching 19 million incoming receivables in a 12-month period using our Intelligent Receivables® solution.

Stepping back, what we saw in 2020 was the impact of years of investment in capabilities and digital access across our platform and our businesses. And what was unique is that even in areas where we had heretofore experienced customers or employees traditionally preferring to operate in a face-to-face, physical world, we saw dramatic changes. We had a record year in new $10 million or higher relationships in Global Wealth & Investment Management (GWIM), yet we were unable to have many face-to-face meetings. We had a record year in investment banking fees, yet all of our "pitch" meetings with clients were virtual. We saw record movement in money by our consumer customers yet we had up to 30% of our financial centers closed for safety. The implications for the long term are yet to be borne out. But we are confident that the investments we have made set us on the correct course.

I want to call out our technology and operations team, who showed creativity and excellence in execution by positioning all of our client-facing teammates to be able to operate in a work-from-home environment. In four weeks, our tech and ops team deployed 100,000 computers and screens to those teammates. It was no small task, and it enabled us to continue to serve clients who themselves were adjusting to the pandemic conditions.

Grow within our risk framework

Growing within our established risk framework is integral to how we drive Responsible Growth. Our principled approach to risk management allowed us to continue supporting our customers and clients against the backdrop of one of the worst economic declines in U.S. history, driven by the global pandemic.

At the onset on the health crisis, we took immediate action to strengthen our reserves for credit losses. We ended 2020 with nearly $21 billion in credit reserves, more than twice what we had at the end of 2019. Together with our existing capital, we have substantial reserves available to manage potential losses. Credit losses were much lower than many expected, but we were confident our underwriting would hold up, and it did. In fact, our actual charge-offs moved from $3.6 billion in 2019 to $4.1 billion in 2020, a slight increase.

On the markets side, our team led by Tom Montag and Jim DeMare navigated the markets very well and we had a strong year of trading revenue. More importantly, we provided support for our institutional clients. And we had only a handful of days with trading losses.

We continue to actively monitor and assess the impacts — both direct and indirect — of the health crisis and other potential risks through our risk management framework. And we continue to drive out operational risk from the company through our focus on operational excellence.

Grow in a sustainable manner

To drive Responsible Growth, we must ensure that our growth is sustainable. There are three complementary and interdependent tenets to how we approach sustainable growth: driving operational excellence, being the best place for teammates to work and sharing our success with our communities.

Driving operational excellence

While "operational excellence," "organizational health," "simplify and improve" and other terms we use may sound a little mechanical, they are instrumental to our success. In 2015, your company had $57 billion in expenses. In 2020, we had $55 billion, including roughly $1.5 billion in net coronavirus-related costs. Compared with 2015, we have more customers and clients and more transactions — so more work. Yet costs are down and headcount is down. During those six years, we invested about $18 billion in technology initiatives, added 15% more sales teammates, opened 300 financial centers and refurbished 2,000 more. All of these investments were made while costs came down. We continue to apply the practice of operational excellence to enable us to produce strong returns above our cost of capital while investing back into our company and our capabilities. This will provide powerful leverage as interest rates rise and the economy continues to recover and grow.

Operational excellence is as much a mindset as it is a program. It describes the ways in which we drive continuous improvement, reduce operational risk and seek to find faster, simpler and more efficient ways of working and serving our clients.

This work is fueled by the ingenuity and creativity of our teammates, who continuously look for ways we can do things better. In total, we've approved nearly 8,600 of their ideas, which commit to delivering billions in expense savings. In 2020 alone, our team generated more than 1,700 ideas that helped us define commitments to save nearly $1 billion. We reinvested those savings back into our team, our capabilities, our client experience, our communities and our shareholders.

For example, savings from operational excellence help fund the ongoing modernization of sites across our real estate portfolio, including renovating our financial centers to deliver a client-focused interior and exterior design and full support for digital transactions.

It's important to note we made investments like these in 2020 — and many more described throughout this report — while at the same time returning $12 billion in net capital to our shareholders. And — as you will see discussed elsewhere in this report — we invested in our team, including the fourth consecutive year of company-wide supplemental bonuses, increasing our minimum hourly rate of pay for U.S. employees and keeping medical expenses down for our lesser-paid teammates.

Being a great place to work for our teammates

Attracting and retaining the best talent is key to driving Responsible Growth and one of our top priorities. It helps us manage our operations, provide the best service for our clients and support our communities.

We strive to make Bank of America a great place to work for all teammates. And we fulfill this commitment by being a diverse and inclusive workplace, attracting and developing talent, recognizing and rewarding performance and supporting teammates' physical, emotional and financial wellness. **On page 26, Sheri Bronstein, our Chief Human Resources Officer, shares her thoughts on our progress in 2020 and what it means for the future.**

Our workforce must reflect the communities we serve. As highlighted in our 2020 Human Capital Management Report, we have continued to make progress in our goal to ensure diverse representation at all levels of our company. Fifty percent of our management team is diverse, and Bank of America is one of only five S&P 100 companies with six or more women on the Board. And over the past decade, the number of people of color we hire in the U.S. from universities has increased by 50%.

1 of 5

Bank of America is one of only five S&P 100 companies with **six or more women on the Board.**

$20

In 2020, we **raised our minimum hourly rate** of pay for U.S. teammates to $20.

We want our teammates to build long-term careers with Bank of America. And that starts with a competitive starting wage and benefits. We moved to our minimum hourly rate of pay for U.S. teammates of $20 — roughly $42,000 per year — one year earlier than planned. And we offer ongoing training and development resources to help those teammates grow and thrive within our organization. We hire with a career mindset. And we work to reskill our teammates.

For teammates earning lower salaries, we provide higher company subsidies for medical premiums. Since 2012, there has been no increase in medical premiums for teammates earning less than $50,000.

To support our teammates during the health crisis, at work and at home, we expanded many of our benefits and resources. This included additional support for mental health, free virtual consultations and no-cost coronavirus testing.

As the pandemic hit, we knew our teammates were going to be under pressure at home. For most of them, home was their workplace. For our 40,000 teammates with children, home was often a school or daycare. For many teammates with aging parents, home became an assisted living space. Our teammates needed help. We offered them $100 per day to hire that help. More than 3 million days of care have been provided. This helped our teammates immensely — they have told us. And it also allowed them to serve our clients better.

In 2020, we came together to support one another like never before. It was a great reflection of the commitments, the compassion and the people that make our company a great place to work.

$2B

We issued a **$2 billion equality progress sustainability bond** designed to advance racial equality, economic opportunity and environmental sustainability.

$1B

We launched a **$1 billion corporate social bond**, the first issued by a U.S. commercial bank to entirely focus on fighting the pandemic.

Sharing our success with our communities

One of the ways we ensure our growth is sustainable is by sharing our success with the communities in which we work and live. We invest significant time and money to help address issues facing our local communities and society at large, and commit all of our business activities and operations to the task.

This begins with our $250 million in annual corporate philanthropy. To this, we added another $100 million in 2020 to increase access to food and medical supplies in local communities.

Individual giving by my teammates, combined with matching gifts from Bank of America, amounted to more than $65 million in additional philanthropic support in 2020. To maximize the impact of each employee gift, we lowered the employee matching gift minimum to $1 and doubled our match for employee donations to 17 organizations through 2020.

We also support our communities through our lending and investing activities. In 2020, for example, we provided a record $5.87 billion in loans, tax credit equity investments and other real estate development solutions, and deployed $3.62 billion in debt commitments and $2.25 billion in investments to help build strong, sustainable communities by financing affordable housing and economic development across the country. Between 2005 and 2020, we financed more than 215,000 affordable housing units.

In May of 2020, we launched a $1 billion corporate social bond, the first issued by a U.S. commercial bank to entirely focus on fighting the pandemic. We followed that up with an industry-first $2 billion equality progress sustainability bond designed to advance racial equality, economic opportunity and environmental sustainability.

Our commitment to racial equality and economic opportunity demonstrates the way in which we approach major societal issues and align all of our resources to help drive progress locally. Our investments and partnerships in this work are targeted at strategic areas in which we already are a leader: jobs, healthcare, housing and businesses. By providing even sharper focus, we seek to make a lasting impact on underserved minority entrepreneurs and communities. **You can read more about how we are executing on our $1 billion commitment and a broader update on our work in sustainable finance in the discussion between Vice Chairman Anne Finucane and Global Sustainable Finance Executive Karen Fang on pages 33–35.**

The most important way we shape our engagement in local communities is through our market president organization. Our network of 90 presidents is responsible for leading an integrated team to deliver for clients, teammates and the community, serving as the chief executive for Bank of America in that market. **We talk more about how our presidents support our clients and communities on page 25.**

Driving profits and purpose

The principles of stakeholder capitalism are embedded in Responsible Growth. We deliver for our clients, our employees, our communities and our shareholders and, at the same time, do our part to deliver progress against society's biggest challenges. This includes our work to support the health and safety of our teammates, the many ways we help the communities we serve grow and prosper, our efforts to promote racial equality and economic opportunity and our ongoing drive toward a clean energy future.

Stakeholder capitalism is not a new concept, even if its recent focus makes it seem that way. As a financial institution, our success has always been tied to the success of the communities and markets we serve. In recent years, business organizations including the U.S. Business Roundtable, the World Economic Forum and others have helped create broader awareness of the ways that companies must think about delivering long-term value — for shareholders, of course, but for all of our other stakeholders, too.

Helping address societal issues can stimulate the commitment of private sector capital to help drive even more progress. And there's growing evidence to back that up. As our Global Research team has found, companies that pay close attention to environmental, social and governance (ESG) priorities are much less likely to fail than companies that do not, giving investors a significant opportunity to build investment portfolios for the long-term. And — through research and our own lived experience — we know that ESG commitments can translate into a better brand, more client favorability and a better place for our teammates to work.

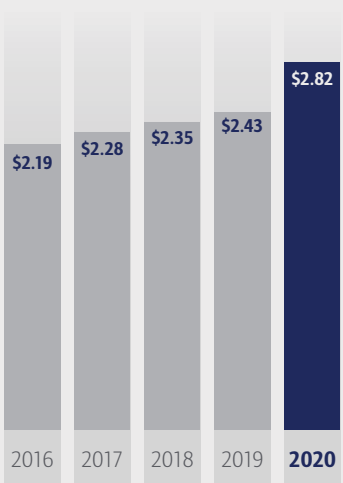
There is an important discussion underway about the role capitalism plays in our society and the ways in which it must evolve to ensure all participants in our economic system are treated fairly and rewards are available equitably. Public companies have an important role to play to help drive that discussion. At Bank of America, we embrace our dual responsibility to drive both profits *and* purpose. And we work with organizations and leaders around the world to champion these ideals and drive meaningful progress. We need a way to measure that and in 2020 we made substantial progress on that front, too.

Measuring and delivering long-term value

To help society make progress toward important goals you need to know two things.

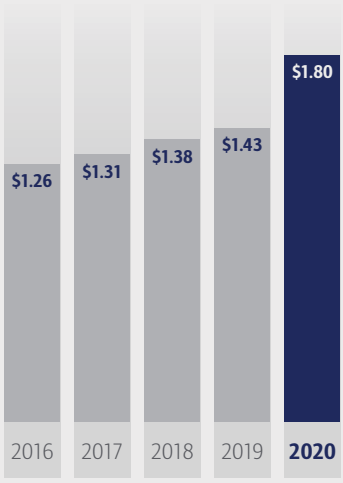
First, you need to understand what society's priorities are. And we do. The countries of the world identified those priorities in 2015, when nearly 200 countries agreed to the United Nations (U.N.) Sustainable Development Goals (SDGs). The SDGs reflect 17 categories of societal priorities that

Total assets
(trillions)



$2.8T

Total deposits
(trillions)



$1.8T

Measuring stakeholder capitalism

The International Business Council, with the collaboration of the accounting firms Deloitte, KPMG, PwC and EY, compiled a set of common ESG Stakeholder Capitalism Metrics disclosures. These metrics are compiled from leading ESG standards-setters, including the Task Force on Climate-related Disclosures (TCFD), the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI) and others. As discussed in CEO Brian Moynihan's shareholder letter in this report, the goal of the Stakeholder Capitalism Metrics is to provide investors and other stakeholders a common set of standards by which to evaluate the progress the company is making to address the societal priorities agreed to in the SDGs. The metrics include non-financial disclosures in four categories: people, planet, prosperity and principles of governance.

Nearly 70 global companies have agreed to begin using the Stakeholder Capitalism Metrics, and many more are evaluating them for their own use. Bank of America is a founding member of His Royal Highness the Prince of Wales' Sustainable Markets Initiative (SMI), which seeks to harness the creativity, the innovation and the balance sheets of businesses around the world to help drive long-term growth in a globally sustainable fashion. In December 2020, under the guidance of His Holiness Pope Francis and His Eminence Cardinal Peter Turkson, Bank of America joined an alliance of business leaders and companies around the world as part of the Vatican's Council for Inclusive Capitalism (VCIC). Comprising companies that collectively have more than 200 million employees from over 163 countries, the VCIC illustrates how capitalism can take the lead in creating economic growth that is fair, responsible, trusted, dynamic and sustainable. The SMI, the VCIC, and similar organizations recognize the Stakeholder Capitalism Metrics as an important step toward providing the disclosures needed to measure the progress that private sector capitalism can help deliver in addressing important societal priorities.

Given the cross-industry application of this set of common metrics, not each standard will apply to each company that is disclosing. Where a disclosure is not provided or not linked to another Bank of America disclosure, we provide a brief explanation. We share the long-term objective of other companies, asset owners and asset managers, key government regulators and the standards-setters themselves that eventually there will be a single set of non-financial ESG disclosure standards to help stakeholders evaluate companies in the same fashion that standard financial disclosures now permit.

address equality of opportunity, affordable housing, prosperity, access to clean water, renewable energy, and other priorities, with specific goals to be met. Leaders in each country agreed these goals are the ones we need to address to build a sustainable future and create opportunity and prosperity for all.

Second, you need to know how to measure progress. The International Business Council (IBC), which I am privileged to chair, has compiled a set of Stakeholder Capitalism Metrics aligned to the SDGs. These metrics create a consistent way of measuring companies' long-term value, across industries. This, in turn, helps direct investment toward high performers and align capital to progress on the SDG and ultimately defines stakeholder capitalism. It also aligns capitalism's innovation, its entrepreneurship and its massive resources to the progress, which won't be made without the private sector.

In September, the IBC — working with the accounting firms Deloitte, EY, KPMG and PwC — released a set of 21 core metrics, and 34 expanded metrics, aligned to the themes of people, planet, prosperity and principles of governance. As of January 2021, Bank of America and nearly 70 other global corporations have agreed to implement reporting on the Stakeholder Capitalism Metrics, and the coalition continues to grow. **Later in this Annual Report you can see our initial set of Stakeholder Capitalism Metrics disclosures.**

At Bank of America, we drive progress on the SDGs through all of our efforts and activities. We do so through our operations, our philanthropy, our human resources practices, our client financing capabilities and the guidance we provide to investor clients. We bring our $2.8 trillion balance sheet, our $55 billion expense base and the trillions of dollars we raise each year for our clients to the task. And, critically, we commit the considerable ingenuity, innovation and passion of our team.

For over a decade, we have focused on driving Responsible Growth so that we can create value for every stakeholder and for society — through every economic environment. Our focus on Responsible Growth positioned us well as we faced the unforeseen challenges of 2020, and positions us well as we look to the future. We remain committed to delivering for our shareholders, our teammates, our clients, our communities *and* to making a positive impact on the world for years to come.

On behalf of my 213,000 teammates, our management team and the Board of Directors, I thank you for your support of Bank of America.



Brian Moynihan
March 1, 2021

A message from outgoing Lead Independent Director Jack Bovender



Dear shareholders:

Thank you for investing in Bank of America. The directors bring independent and diverse perspectives to our task of helping create long-term value for you. We represent a range of expertise, backgrounds and skills, including chief executives and others who have served in senior risk, operations, finance, technology and human resources positions.

This mix of expertise and experience is beneficial throughout the year, including in the fall when the management team presents the company strategy for the board to review and approve. We oversee the execution of the strategy through regular, systematic interaction with company management. In performing our duties, we are mindful of developments in the markets, the economy and geopolitical issues that may impact the execution of the strategy.

Our responsibility is to assess opportunities and risks and determine how well the company is adhering to the tenets of Responsible Growth that drive the company's strategy. CEO Brian Moynihan discusses this in greater detail in his nearby letter and you will see it brought to life in the articles and disclosures throughout this report. The tenets of Responsible Growth include the company's ESG practices. Our Corporate Governance, ESG and Sustainability Committee reviews and reports to the board on the company's activities in these areas. This includes, for instance, the company's recently announced commitment to net-zero greenhouse gas emissions by 2050.

As many of you know, I will be retiring from our board at the time of the annual meeting. Since becoming the Lead Independent Director of Bank of America, I have had the privilege of meeting annually with many of our shareholders. The feedback from these meetings has been invaluable and I have routinely shared it with the board. It has significantly shaped our approach to fulfilling our governance responsibilities. For more detailed information, please review this 2020 Annual Report, our 2021 Proxy Statement and our Human Capital Management Report.

At the annual meeting, Lionel Nowell will assume the role of Lead Independent Director. Lionel is totally committed to his new role and will continue our practice of meeting regularly with our shareholders.

It has been both an honor and pleasure to serve as Lead Independent Director. On behalf of Brian, Lionel and the other directors, thank you for investing in Bank of America.

A message from incoming Lead Independent Director Lionel Nowell



To my fellow shareholders:

I join Brian Moynihan, Jack Bovender and the other directors in thanking you for choosing to invest in Bank of America. I began my service as a Bank of America director in January 2013, and I have appreciated the opportunity to oversee the development and execution of the company's strategy for long-term Responsible Growth. Fifteen of the company's 16 directors are independent and we bring our unique perspectives to each of our board and committee meetings.

Our discussions among ourselves and with the company's management are grounded in facts and data. I am particularly pleased with the level of detail we regularly disclose to our investors, including in the 2020 Human Capital Management Report and other non-financial disclosures we make to give you as clear a picture of our company as we can.

I also value the insights I receive when I speak with shareholders; I intend to maintain a consistent rhythm of engagement in the same fashion as my predecessor, Jack Bovender. I want to thank Jack for his impressive leadership as our Lead Independent Director, and I look forward to assuming those responsibilities after the 2021 annual meeting.

Thank you again for your investment in our company.

Bank of America

Board of Directors



Brian T. Moynihan
Chairman of the Board and
Chief Executive Officer



Sharon L. Allen



Susan S. Bies



Jack O. Bovender, Jr.



Frank P. Bramble, Sr.



Pierre J.P. de Weck



Arnold W. Donald



Linda P. Hudson



Monica C. Lozano



Thomas J. May



Lionel L. Nowell III



Denise L. Ramos



Clayton S. Rose



Michael D. White



Thomas D. Woods



R. David Yost



Maria T. Zuber

We set the tone at the top through oversight by our Board of Directors, who oversee our corporate strategy. In addition, the heads of our eight lines of business as well as key leadership for International and our institutional client base make up our Executive Management Team.

Bank of America

Executive Management Team



Brian T. Moynihan
Chairman of the Board and Chief Executive Officer



Raul A. Anaya
President, Business Banking



Dean C. Athanasia
President, Retail and Preferred & Small Business Banking



Catherine P. Bessant
Chief Operations and Technology Officer



D. Steve Boland
President, Retail



Alastair M. Borthwick
President, Global Commercial Banking



Sheri B. Bronstein
Chief Human Resources Officer



James P. DeMare
President, Global Markets



Paul M. Donofrio
Chief Financial Officer



Anne M. Finucane
Vice Chairman, Bank of America



Geoffrey S. Greener
Chief Risk Officer



Christine P. Katziff
Chief Audit Executive



Kathleen A. Knox
President, Private Bank



Matthew M. Koder
President, Global Corporate & Investment Banking



David G. Leitch
Global General Counsel



Aron D. Levine
President, Preferred and Consumer Banking & Investments



Bernard A. Mensah
President, International



Thomas K. Montag
Chief Operating Officer



Thong M. Nguyen
Vice Chairman, Bank of America



Andrew M. Sieg
President, Merrill Lynch Wealth Management



Andrea B. Smith
Chief Administrative Officer



Bruce R. Thompson
Vice Chairman, Bank of America



Sanaz Zaimi
Head of Global Fixed Income, Currencies and Commodities Sales; CEO of BofA Securities Europe SA, and Country Executive for France

Addressing a global health crisis as one company

We're united in helping our teammates, clients and communities — when and where they need us most.

In 2020, our company rallied as we never have before — across every business and in cities and towns around the world — to respond to the health and humanitarian crisis affecting individuals, families and business owners in the communities where we live and work. Our services are essential to our clients and to the economy. Through our global presence and longstanding focus on addressing critical social issues, we've taken care of our teammates and their families, delivered for our clients when and where they needed it most and supported relief efforts around the world. And, together, we ended 2020 stronger and more committed to the people and causes we care about.





Supporting the health and safety of our teammates

Our teammates' health and safety is always our top priority. Since the coronavirus was first identified, we have taken many broad-ranging steps to protect all of our teammates and to support their families.

- **We seamlessly transitioned about 85% of our employees to work from home**, including any teammate who identified as high-risk. For employees who identify as high-risk, many have been redeployed to roles they can perform remotely.
- **To ensure our employees maintain access to critical medical resources**, we have provided no-cost telehealth resources with 24/7 virtual access to general medicine doctors and mental health specialists, home delivery service of preventative prescription medications with a temporarily waived refill waiting period and no-cost coronavirus testing.
- To help address the personal impacts the environment has had on teammates and their families, we have **expanded our back-up childcare for employees in the U.S.**, including providing nearly three million days of back-up child and adult care and an investment of nearly $300 million in child and adult care reimbursements in 2020 to help offset costs for our teammates. We have continued that support in 2021.
- Additionally, we have provided a variety of **resources to help parents and caregivers as their children return to school** (whether in-person or virtually), including a dedicated back-to-school website with webinars, articles, weekly tips and discounts on computers, devices and school supplies.
- We also have added **new physical and mental health resources**, such as training for stress management, resiliency and mindfulness — and provided additional vacation and personal day flexibility.
- We have expanded our dedicated team of **Life Event Services (LES) specialists** to provide personalized support to teammates impacted by the coronavirus, and we continue to offer 24/7 confidential counseling through our **Employee Assistance Program (EAP)** for teammates and their immediate family members.

Additionally, we have taken specific actions to support the health of our thousands of teammates working in the office — in our financial centers, operations centers and trading floors — and to recognize all our employees are doing in support of our clients, including:

- **Temperature checks, daily health screenings and onsite nurses** at many of our sites. We will continue to expand these measures prior to additional employees returning to the office.
- **Onsite coronavirus testing** introduced for employees working **in our financial centers and administrative buildings** with more than 100 employees working in the office
- **Enhanced deep cleanings** of our facilities, installing thousands of **wellness barriers** and putting **physical distancing markings** in place for our employees and clients
- **Special compensation programs**, including supplemental pay, enhanced overtime pay and other special incentives for employees working in our offices and buildings to serve clients
- **Transportation and meal subsidies**, delivering more than three million meals to employees to-date

These are just some examples of how we have supported our teammates and their families during this critical time. For more information on these and other programs and benefits we provide, read about our response to the coronavirus in our 2020 Human Capital Management Report.



Delivering for our clients

When our clients needed us most, our teammates redoubled efforts to help clients navigate the changes and challenges of 2020 in new and creative ways: transitioning from in-person to virtual interactions, using new technologies and launching client relief efforts.

Employees around the world continued to provide advice, guidance and access to all our capabilities to help clients meet their financial needs. In particular, teammates have been proactively reaching out to clients across all businesses, including by sending millions of emails and placing outbound calls to Consumer & Small Business clients, holding thousands of calls, meetings and broadcasts to actively advise and connect with Merrill Lynch Wealth Management and Private Bank clients, and issuing proactive guidance and market insight from our BofA Global Research and Investment Insights teams through multiple channels, including virtual investor conferences.

Our employees have also delivered critical financial relief for clients through our programs as well as efforts launched by the federal government.

Specifically, we helped 343,000 small business clients receive loans through the Small Business Administration's Paycheck Protection Program — extending more than $25 billion — and processed more than $26 billion of EIP for clients in 2020. We also processed nearly two million payment deferral requests.

343,000

We have **helped 343,000 small business clients receive loans** through the Small Business Administration's PPP.

Investing in our communities

Additionally, to help address the impact of the coronavirus in our communities, we donated important PPE to communities across the U.S., including more than 22 million face coverings, nearly 3 million gloves and more than 17,000 cases of sanitizer through early February 2021.

We pledged $100 million toward medical supplies, food security and other vital support, and an additional $250 million to community development financial institutions (CDFIs) to provide more companies and not-for-profits access to important capital.

And, in recognition of the broad and deep impact the humanitarian crisis is having on communities and people of color, we have made a $1 billion, four-year commitment to accelerate work underway to help advance racial equality and economic opportunity — specifically focused on workforce development, healthcare, housing and small-business assistance.



Donating PPE in our communities

22M+	3M	17,000+
face coverings	**gloves**	cases of **hand sanitizer**

Investing in our communities

$100M	$250M	$1B
toward medical supplies, food security and other vital support	**to CDFIs** to provide more companies and not-for-profits access to important capital	**4-year commitment to accelerate work underway** to help advance racial equality and economic opportunity

Looking ahead to 2021

While we made a tremendous impact in supporting our teammates, clients and communities in 2020, our work isn't finished. The health crisis continues to affect the global economy as well as individuals and communities around the world. Our focus now is what else we can do — and how we can do it better. Throughout 2021 and beyond, we remain resolute in how we meet our clients' changing needs, how we take care of our teammates and how we help our communities move forward in meaningful ways.



Working together to meet clients' changing needs in a challenging year

Q&A with D. Steve Boland, President, Retail and Aron Levine, President, Preferred and Consumer Banking & Investments

In 2020, Steve and Aron worked together to deliver exceptional service and a full suite of products and platforms to help make our clients' financial lives better.





Q. What did you learn from clients last year, and how did you respond to their changing needs?
Steve: Our clients needed to know that we would stand by them and help provide safe and reliable ways to help them manage their finances any time and any way they choose. We found that the best way to do this — and what our clients are most comfortable with — is through our award-winning digital capabilities. Our high-tech and high-touch approach means that between our full-featured mobile and online platforms and the expert, personal service we offer in our financial centers, we believe we can quickly adapt and respond to clients' evolving needs. In 2020, we used our Client Assistance Program to help clients experiencing hardships related to the impact of the coronavirus and provided financial relief through the Coronavirus Aid, Relief and Economic Security Act and the PPP, as well as by processing EIP.

Q. How is Bank of America meeting the needs of today's mass affluent clients?

Aron: Mass affluent clients have more diverse needs than ever before and are looking for advice and education to help them meet their banking, lending and investing goals. Our Preferred business is designed to provide these clients with streamlined ways to manage their finances and obtain advice and guidance when and wherever they want. We provide extensive rewards and benefits across their entire relationship with us — the more they do with us, the more their benefits grow. Throughout 2020, our high-tech digital capabilities together with our personalized high-touch approach allowed us to deliver a more intuitive and efficient banking experience for our clients across all of our channels, providing the expertise of financial professionals in our financial centers, Merrill offices, digitally and over the phone.

Q. Bank of America launched Balance Assist last year. What is it, and why was it the right thing to do?

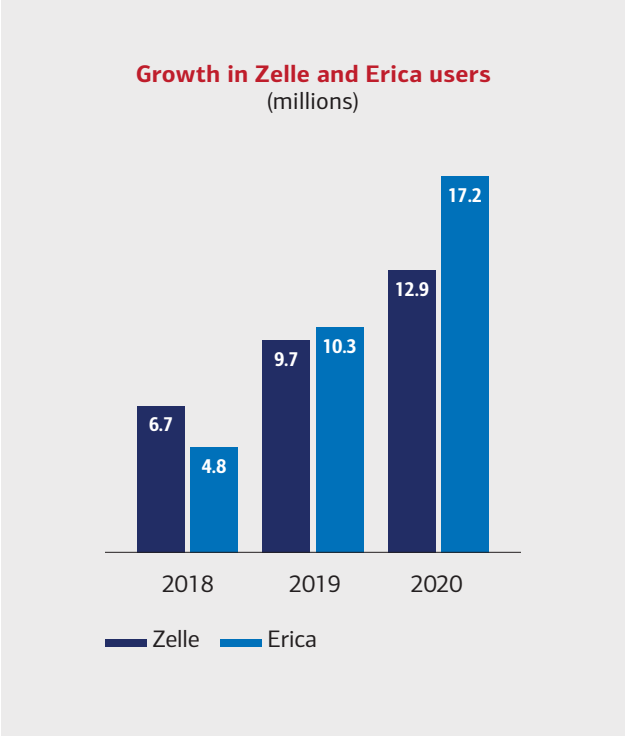
Steve: Balance Assist provides a unique low-cost, digital way for our clients to manage their short-term liquidity needs, borrowing only the amount they need, up to $500. We believe people want the power to achieve financial freedom and stability, and are seeking simple, clear solutions and advice

"We're in an advantageous position to provide the solutions and advice our clients need while helping them build their financial acumen."

to help them along the way. Balance Assist is the latest in a set of transparent, easy-to-use solutions to help our clients budget, save, spend and borrow carefully and confidently. With solutions like SafeBalance Banking®, the Keep the Change® savings program, our secured credit cards and our affordable homeownership options, we're in an advantageous position to provide the solutions and advice our clients need while helping them build their financial acumen.

Q. Clients often begin a financial relationship with Bank of America as young adults then progress to Retail, Preferred and beyond. How is Bank of America equipped to help clients at every stage of life?

Aron: We are committed to meeting the full range of our clients' needs, at every stage of their financial lives. To do so, we strive to develop strong partnerships across our Retail and Preferred businesses, as well as with Merrill and the Private Bank, to serve the needs of our clients along the full wealth spectrum. We introduced Bank of America Life Plan® to help clients set and track progress on their short- and long-term financial goals based on their life priorities and relationship with us. We've also invested heavily in providing quality financial education and developing industry-leading tools and resources, like Better Money Habits® and our new Idea Builder to help ensure clients are banking and investing with their financial goals in mind. Together, we offer a comprehensive relationship, and provide a streamlined way for clients to manage their finances with advice and guidance that grows along with them.



"We are committed to meeting the full range of our clients' needs, at every stage of their financial lives."

Growth of digital banking, lending and investing at Bank of America

In 2020, our clients depended on our digital capabilities more than ever before, with 69% of our Consumer, Small Business and Wealth Management households generating nine billion logins.

To better serve our clients, we invested in new technologies and enhanced our industry-leading digital capabilities, developed and deployed by Head of Digital David Tyrie and his team, in partnership with Chief Information Officer and Head of Consumer, Small Business & Wealth Management Technology Aditya Bhasin and his organization in Global Technology & Operations.

Digital accounted for 42% of consumer sales, and our Consumer & Small Business households were reliant on our core digital capabilities, such as our digital financial assistant Erica®, Zelle® and Mobile Check Deposit, among many others, as well as our virtual (phone, video and chat) channels. The number of Erica users grew 67% over the course of the year, and Erica has helped clients with over 200 million requests since launch in 2018. Notably, Zelle transaction volume grew 71% year-over-year. Our automated channels (mobile, online and ATMs) accounted for 84% of deposits in 2020, up from 78% in 2019.

We deliver a wealth of services through our mobile and online banking, ATM and Erica platforms, and are constantly exploring ways to expand, interconnect and perfect these tools to deliver a more seamless, personalized experience for each client that spans and supports their entire relationship with us.



Delivering for our clients with defining differentiators

Q&A with Matthew Koder
President, Global Corporate & Investment Banking

For our Global Corporate & Investment Banking teammates and operational specialists, close coordination and enhanced communication was key to providing optimal financing and strategic solutions for clients while winning their confidence in 2020.

Q. How did your business stand out in 2020?

Matthew: Despite last year's unprecedented uncertain market environment, we were relentless in helping our clients and distinguishing our business with many leading, innovative solutions. We provided support by advising across the entire capital structure and executing transactions across loans, bonds, convertibles, follow-ons, IPOs, private capital markets, mergers and acquisitions and more. Through it all, we believe the high volume of deals and transactions we completed on behalf of our clients repeatedly showed we had their trust and that our integrated corporate banking, investment banking and capital market services — along with the bank's strong balance sheet, highly developed global platform and innovative solutions — were our defining differentiators.

While 2020 may have physically separated us from our clients, it didn't dampen the opportunity to stay connected, deepen relationships and drive enhanced value. We significantly increased the level of our communications with our clients and expanded our client base by leveraging local coverage teams and cross-business integration opportunities. We believe the more clients do with us, the more value we can offer them from our integrated resources and expertise. In addition, despite the complexities of the environment, we continued to enhance our client-facing platforms at a record pace to drive connectivity and efficiency and deliver smarter, faster and more secure digital experiences for clients.

Q. What were some of your key accomplishments in 2020?

Matthew: When our clients needed a strong financial partner through the crisis, we were committed to be there — approving over $100 billion in credit across approximately 500 requests. In addition, our team's resilience and the seamless strength of our connections positioned us as the industry leader in re-opening the capital markets after the initial market dislocation resulting from the pandemic. By the end of 2020, we helped raise approximately $772 billion of capital in the

global capital markets. This leadership and experience further provided us with critical insight into investor receptivity, which allowed us to advise our clients on optimal financing solutions across products, markets and geographies throughout the year.

We believe all of these efforts resonated with our clients and translated into our ability to increase our investment banking fees by 27% in 2020. This resulted in a total of $7.2 billion in fees, which was a record for a full-year and also included three of the strongest quarters in our company's history. In addition, we increased our investment banking industry ranking to #3 and grew our market share by 70 bps — including our highest ever share in equity capital markets and mergers and acquisitions. We see all of these as valuable indicators of our clients' confidence in our people and capabilities.

Q. What impact did your business make on sustainable finance in 2020?

Matthew: Leadership in ESG and sustainable finance are valuable competitive differentiators for Bank of America. We're always looking for innovative solutions for investors to support social and environmental change. The past year was particularly meaningful to us because our bankers and operations teams drove a number of industry-leading achievements.

For example, we were the #1 global underwriter of corporate ESG-related bonds. In addition, we helped launch the world's first sustainability-linked bond and led the first green convertible bond in the U.S. with a designated green use of proceeds. This particular accomplishment represented an important, innovative landmark, as it was the first time sustainable finance tools crossed over into the equity-linked market. We also underwrote nearly $50 billion in coronavirus-related social bonds, helping a broad audience from corporations to national governments finance their pandemic responses.

Strong interest from our clients in these bonds shows that companies can do good *and* do well. There is a growing desire around the globe to support investments that have a positive societal impact. And, we're proud to be at the forefront in delivering these solutions.

Q. Looking to 2021 and beyond, what do you want your clients to know?

Matthew: That we will continue to be there for them. In the long shadow of the health crisis and amidst so many transformational changes, we will continue to be there for our clients as their steadfast and trusted partner. We are committed to leveraging our resources and franchise to deliver for them — and grow with them — as the recovery takes root.



Making significant progress internationally

A message from Bernie Mensah
President, International

Our international presence, which spans approximately 35 countries and territories, is vital to the thousands of corporate and institutional clients that we serve. We strive to provide rapid, on-the-ground access to our expansive platform and capabilities, exceptional market insight and a talented, diverse and dedicated employee base. Never has this been more important than in 2020, a year of significant progress for our company internationally, notwithstanding the challenges of the health crisis.

In Asia Pacific, we generated record revenues participating in the rapid growth of capital markets in the region and connecting investment capital to significant opportunities presented in many of the world's fastest growing large economies. From China to Australia, and India to Japan, we provided critical advice on multiple transactions, helping clients to access primary capital and market liquidity as needed.

In Europe, Africa and the Middle East, despite the backdrop of more challenging economic conditions and political uncertainties, we continued to see our franchise advance with important new client gains in many product areas. In addition, after nearly four years of preparation, we successfully completed our thorough Brexit planning, making the necessary adjustments to ensure we could continue to seamlessly and efficiently service all clients in both the E.U. and the U.K. from our key hubs in Dublin, Paris and London and additional local offices. With Brexit uncertainties behind us, we now look forward to continuing to expand our market share across all our lines of business in the region.

We now are focused on building on our current momentum by continuing to drive Responsible Growth globally and meeting client needs in the year ahead.

Delivering innovative wealth solutions and exceptional client service

Our focus on supporting our clients in Merrill Lynch Wealth Management and Bank of America Private Bank is stronger — and more important — than ever before. To meet clients' diverse needs and maintain the highest level of service as we helped them navigate the changes 2020 presented, our advisors created new ways to deliver innovative solutions and the power of Bank of America's capabilities and technology. As a result, we forged even deeper, more meaningful connections with our existing clients, while adding thousands of new relationships — and improving client satisfaction across the board.

Running a relationship business when people can't come together

As the environment changed, our wealth management businesses quickly transitioned to connecting with clients in new ways, including meeting virtually. Through rapid deployment of Webex video conferencing, 25,000 wealth teammates held approximately 375,000 virtual client meetings — five times more than the year before — engaging clients in wealth, estate and philanthropic planning conversations. Our teams also stayed connected virtually, setting strategy, sharing peer-to-peer learning and insights and recognizing success in new ways.

Expanding digital capabilities to meet clients' needs

Throughout the year, we added a steady stream of digital enhancements to transform how we deliver advice and service. Working closely with our clients, we empowered them to embrace our digital innovations so they could access information, execute transactions and seamlessly collaborate with their advisors.

For example, clients now use Mobile Easy Sign digital signatures for more than 80% of account opening and maintenance tasks. Through the Client Engagement Work Station, advisors can view all critical information regarding clients' accounts which helps deliver a great experience. Another innovation, the Personal Wealth Analysis, is a single tool connecting clients' goals to investment solutions.

The bank's digital leadership also made it easier for us to provide more comprehensive service. With one click, clients can deposit checks, make transfers, pay their mortgage and see their credit card activity. During 2020, 77% of wealth management clients used our online or mobile platforms and opened 107,000 bank accounts.

The importance of advice and guidance in a changing environment

Throughout 2020, our clients and families expressed a greater need for comprehensive and personalized financial advice than at any time in the past. Our Chief Investment Office helped answer the call by providing valuable insights through its rapid-response commentaries, as well as through its industry-leading thought leadership and investment strategies, the latter comprising more than 100 managed investment platforms.

Building wealth management for the future

In 2020, we continued to carry out our vision to be our clients' trusted partners — providing support, helping them meet their needs and achieve their goals by providing helpful advice and service at every stage of their financial lives. We are led by advisor teams with a passion to serve and excel. Our exceptional colleagues are winning more top rankings than any other firm and multiple awards for their customer service and philanthropy expertise. And we are becoming more diverse, better reflecting the families, enterprises, institutions and communities we serve.

We believe Bank of America's wealth management businesses are strongly positioned for the future, ready to answer the next set of challenging questions that comes. We will continue to strive to be an industry leader, and we will judge our performance on our success in helping our clients achieve their goals.



What sets us apart: BofA Global Research

Candace Browning
Head of Global Research

Under the leadership of Candace Browning, BofA Global Research is constantly evolving with a singular focus — to best serve the needs of our clients. The division was named Top Global Research Firm by Institutional Investor magazine from 2011-2016 and in 2019, and the No. 2 firm in 2017, 2018 and 2020. More information about these awards can be found at *https://go.bofa.com/awards.*

A team of more than 675 analysts located in 20 countries provides recommendations on 3,300 stocks and 1,350 corporate bond issuers globally across 24 sectors, as well as forecasts for 56 economies, forecasts for 26 commodities and recommendations on 47 currencies. The goal is to create innovative, collaborative and forward-looking research and deliver it in a variety of ways that suit our clients.

44,000+

Delivered **more than 44,000 research reports**

"Through strategic innovation and collaboration across regions, sectors and disciplines, our mission is to transform information into actionable investment insight," said Browning.

From major world events to deep-dives into sectors and industry-leading research on ESG impacts, the team leverages its knowledge, relationships and cutting-edge technology to uncover insights and trends.

In 2020, during a year of unprecedented market volatility, BofA Global Research demonstrated its commitment to our clients by delivering more than 44,000 research reports and hosting nearly 3,000 conference calls.



Serving our clients and communities through technology

Through our Global Technology & Operations team, we're providing industry-leading capabilities to drive client service and deepen relationships, faster and better.

There is no question that the events of the past year accelerated the use of digital capabilities by our clients across every line of business, with nine billion online and mobile logins in our consumer and wealth management businesses alone. We saw record-setting levels of use of our digital and electronic channels to conduct every element of our clients' business — investing, savings, all the way up to our large institutional customers.

People are interested in virtual connectivity and its ability to augment and, in some cases, replace physical connectivity. Add in the fact that we had no choice but to connect virtually, and our digital capabilities really worked to our advantage. 2020 has shown us that digital adoption will continue to grow.

Our clients' rapid adoption of digital capabilities was made possible by work we began a decade ago. Back then, we started to simplify and modernize our technology and infrastructure, an intensive transformation that would support our businesses, help reduce risk and improve our competitive cost position. Through that work, we removed $2 billion annually from our operating expenses while replacing core platforms to create modern operations.

"Merrill benefits tremendously from the technology investments made by Bank of America over the past several years," said Andy Sieg, president of Merrill Lynch Wealth Management. "Our best-in-industry digital capabilities continue to set Merrill apart from the competition, enabling clients to work with us when they want, how they want, while providing the seamless experience they demand."

Shared platforms and a common infrastructure across the enterprise brought together company data and emerging technology to improve service, drive speed to market and increase data accuracy, while decreasing risk and improving cost to serve our clients. Our modern infrastructure and simplified operations underscore the importance of smart investments. We continue to invest approximately $3 billion annually in technology growth — especially in digital, mobile and online platforms.

Further driving the digital transformation is our culture of innovation. Last year, the bank ranked 108th on the Intellectual Property Owners Association's list of the top 300 U.S. organizations receiving patents, our highest ranking ever. That ranking reflects our company's record-high 443 patents for innovations related to money transfers, bill payments, ATM transactions, check verification using augmented reality and authentication technology. The bank's patent portfolio consists of more than 4,600 patents and applications, resulting from the work of more than 5,700 inventors from 12 countries.

"Innovating is essential to making life easier for our clients," said Cathy Bessant, chief operations and technology officer. "We do not have an innovation lab or an innovation team, because it's everyone's job. These numbers demonstrate our unmatched commitment to making sure innovation is part of our DNA."

During the world health crisis this past year, we realized the importance of connectivity, bandwidth and technical tools. We are using technology to bridge divides by helping to make sure connectivity is universal and equally available to all. We believe equity of access and service will drive economic mobility and equality going forward, and Bank of America will strive to be at the forefront of that change.





Market Presidents deliver our global company to each client, employee and community

Hong Ogle
President, Bank of America Houston

In cities and towns across the U.S., Bank of America's more than 90 market presidents and their teams lead the local work of the company to serve clients, support teammates and strengthen communities. In 2020, the efforts of our market presidents were more critical than ever, particularly in cities like Houston, Texas, that faced challenges on multiple fronts.

"2020 will be a year to remember," said Hong Ogle, president of Bank of America Houston, who also leads the Central South Division for the Private Bank region, overseeing offices in Texas, Kansas, Oklahoma, Arkansas and the surrounding states. "In addition to the health crisis, oil and gas price volatility added extra stress on Houston, the energy capital of the world. And, being the hometown to George Floyd pushed our city to the front lines of the racial justice movement."

Through it all, Hong says, the team remained undeterred, rising to the challenge to support teammates, serve clients and help the Houston community. Hong is especially complimentary of the financial center teammates who expertly cared for clients who needed our support and services throughout the health crisis and of commercial banking client managers, financial advisors and personal bankers who rallied to help their clients manage through changing conditions.

Integrating our full capabilities for the benefit of each client is among the chief responsibilities of our market presidents, who help to ensure all lines of business are working together seamlessly.

For example, last year, Houston teammates in Business Banking and the Private Bank came together to help a 20-year, Houston-based client sell their company to another client in Ohio. The Houston-based client manager connected the Texas client to a local Private Bank advisor, ultimately helping them entrust the proceeds of the sale, along with other assets, to the Private Bank. This interaction highlights the value and importance of integration across our businesses in markets across the country.

Integrating our capabilities and expertise influences how market presidents and their teams address challenges facing their communities. After our four-year, $1 billion commitment to drive racial equality and economic opportunity was announced, the Houston team went to work, partnering with local elected officials and community leaders to help ensure the collective resources were spent wisely.

Hong also feels a personal connection to the commitment the company has made to driving equality and helps further these efforts locally in the Houston community. She came to the U.S. from China when she was 24, and is a leader in several company diversity groups as well as the city's Greater Houston Partnership Racial Equity Committee. "I feel a strong responsibility to help make sure dollars are spent where it makes a difference," she said. "It's not just about giving money — it's helping people and communities. And it's helping not just those individuals who benefit directly from these programs; it's also helping their families and future generations."

This focus on clients and community led Bank of America to be named Large Corporation of the Year by the Association of Fundraising Professionals Greater Houston and Hong to be recognized as a Houston Business Journal Most Admired CEO in 2019, accolades that reflect the team's work carrying forward the bank's mission while making an impact locally.



Being a great place for our teammates to work

A message from Sheri Bronstein
Chief Human Resources Officer

We know 2020 will be remembered for many reasons, including the global health crisis and the social and racial inequalities that were exacerbated by it. At Bank of America, it was a year that strengthened our resolve to identify additional opportunities to support our teammates and address societal issues. Together, we continued driving progress, and we have much to be hopeful for as we look ahead. And importantly, in 2020 we were reminded how critical it is that we take care of ourselves, our families, our clients, our communities and each other.

As a company, we have a long history of supporting our teammates and their families by investing in their physical, emotional and financial well-being. In response to the global health crisis, we took significant steps to provide enhanced resources and benefits to help our teammates stay healthy and balance the competing priorities of work and home. Those benefits include access to virtual medical and behavioral consultations, robust emotional wellness training through our partnership with Thrive Global and child and adult care resources designed to help our teammates ensure their loved ones were cared for. You can read more about our support for teammates on page 15.

We also felt the urgency to address the ongoing impacts of racial inequality in the communities where we live and work. While diversity and inclusion is and has been core to our values as a company for multiple decades, it was a year in which we needed to bring together our efforts with our teammates and marry those with the work we do with our communities and clients. Our courageous conversations series served as a foundation for dialogue amongst our leaders, our teammates, visiting speakers and authors, and gave a platform for our $25 million charitable donation to the Smithsonian so they could facilitate conversations on race across our country through the eyes of one of our most important educational

museums and institutions. Our longstanding efforts to drive economic opportunity and upward mobility provided the foundation for us to quickly accelerate efforts we had underway to create greater opportunities for people and communities of color. While we have much more to do, I am proud of the initiatives we're advancing in connection to our $1 billion, four-year initiative focused on addressing systemic gaps in education, healthcare, workforce development, housing and other important areas. You can learn more about these efforts on page 33.

I also encourage you to read about our efforts to support the health and safety of our teammates as well as the work we're doing to advance racial equality and economic opportunity in our 2020 Human Capital Management Report. We initially launched this report in 2019 as a means to provide transparency into our employee practices, our workforce diversity metrics and all that we do for our teammates to be a great place to work. It was the first-of-its-kind in the industry and has been met with overwhelmingly positive responses from our shareholders, our teammates and our clients.

Our deep appreciation for our teammates, their dedication to living our purpose and their support for each other remained at the core of every decision we made in 2020. And from last year, we learned incredible lessons: thanks to our teammates, our ability to remain resilient and the importance of our decade-long commitment to Responsible Growth, we were able to serve our clients and communities when they needed us most. As we begin a new year, our focus on supporting our teammates, their families and the clients and communities we serve will continue to guide everything we do.

200,000+

We support our **more than 200,000 global teammates** and their families through comprehensive benefits, programs and resources.

2020 Human Capital Management Report

In November, we released our 2020 Human Capital Management Report, which continues our efforts to provide clarity and transparency around all we do to be a great place to work and to support our more than 200,000 teammates and their families. Building on our inaugural Human Capital Management Report from 2019, our 2020 report shares the many programs and resources, as well as supporting data, in our primary focus areas: being a diverse and inclusive workplace; attracting and retaining exceptional talent; providing holistic benefits supporting our teammates' physical, emotional and financial wellness; and recognizing and rewarding performance.

New in this year's report is information on the many unprecedented steps we have taken during the ongoing health crisis and to advance work underway to drive racial equality and economic opportunity. In addition, we continue to share metrics on diverse representation across our company, a practice we have had in place for many years. We will continue to report on these items and the progress we're making as part of our ongoing focus on driving Responsible Growth and making this the best place for our teammates to work.





Driving meaningful change when the world needs it most

Our ongoing work to foster a diverse and inclusive environment took on greater meaning for our more than 200,000 global teammates during a year that brought issues of racial inequality and social injustice to the forefront. The global health crisis has exposed longstanding disparities in our society and inspired one of the greatest social justice movements in modern history.

These realities strengthened our resolve and inspired our work to right the injustices we've witnessed. We have a greater clarity of purpose for where we want to go as a company and in the communities where we live and work — as well as the work we need to do to get there.

This starts with being a great place for our teammates to work, which is foundational to continuing to drive Responsible Growth. We know we must reflect the diversity of the clients and communities we serve and continue to take meaningful steps to ensure diverse representation at all levels of our company. Attracting diverse talent is a priority, and we achieve this through a variety of recruiting efforts, including through internships and campus programs, targeted partnerships with diverse organizations, support for military and veterans, and hiring and reskilling individuals from low-and-moderate income (LMI) communities. "We know that just because you have diversity in representation does not mean you have inclusion. That's why we continue to work to ensure we have a culture where our teammates feel comfortable bringing who they are to work each day and why we offer equal access to opportunity at all levels of our company," says our Chief Diversity & Inclusion and Talent Acquisition Officer Cynthia Bowman.

We also look to address societal priorities that impact communities around the world. In 2020, building on longstanding work underway, we made a $1 billion, four-year commitment to help drive racial equality and economic opportunity for people and communities of color with a focus on healthcare, jobs, small businesses and housing. We've also continued to deploy capital to businesses and communities in need of economic revitalization through CDFIs and issuing social bonds.

Another way we actively promote these principles is by engaging each other through courageous conversations — sharing perspectives on our differences and establishing connections to create greater empathy and understanding. Last year, we held courageous conversations, reaching more than 165,000 employees with civil rights, social justice and inclusion leaders focused on racial, social and economic injustices.

As we look to the work and road ahead, investing in our teammates, our clients and communities will always be core to who we are and how we drive Responsible Growth. By first looking inward and holding ourselves accountable to increasing diversity across our teams, we will continue taking steps forward to help drive inclusion and meaningful progress in the communities we serve.

Supporting emotional wellness and mental health

Supporting our teammates' emotional wellness and mental health has always been a critical focus for us. In 2020, people's daily lives and routines were impacted in many ways, bringing the conversation of emotional wellness and mental health to the forefront. Given the new stressors and demands our teammates faced over the year, it was important employees understood the range of resources available to support their emotional wellness and mental health. We enhanced our ongoing offerings to include innovative, industry-leading and flexible programs and resources to help our teammates and their families.

In 2020, we provided no-cost consultations with Teladoc's® behavioral health specialists for employees on a national U.S. bank medical plan. We also expanded training and education to help teammates build key skills to enhance their well-being. Additionally, through our partnership with Thrive Global, a corporate and consumer well-being firm, we launched emotional wellness and resiliency training for employees. These virtual courses address stress management as well as ways to build resiliency and avoid burnout. Our mindfulness daily practice sessions and introductory courses hosted by internal specialists help teammates create and maintain peace of mind. In addition, ongoing mental health tips from experts, mindfulness apps and open conversations about mental health helped teammates prioritize their own wellness.

Our ongoing work to care for our teammates' emotional wellness and mental health includes confidential counseling and unlimited telephone consultations, available 24/7, through our Employee Assistance Programs for both teammates and members of their household. And, for support for major life events, our internal, highly specialized Life Event Services team connects employees to resources, benefits and counseling.

"The last year taught us that prioritizing our emotional wellness and mental health was incredibly important. It was critical to ensure that our employees knew they, and their loved ones, were supported. As we move into 2021, our focus will stay the same — offering benefits, programs and resources to meet their diverse needs."

— **Chris Fabro,** Global Head of Compensation, Benefits and Executive Development



Continuing to be a workplace where all teammates can grow and thrive

In a year unlike any before, the diversity and broad perspectives of our teammates enabled us to make a positive impact for our clients and communities. We continue to invest heavily in our people — bringing diverse talent to our company, supporting their well-being and giving opportunities to grow and develop. Meet four exceptional women who bring their diversity of thought and experiences to life across our company.



Helping teammates care for their families

Jessica Cullen
Global Banking & Markets
Global Commercial Banking Relationship Manager

Jessica Cullen, a relationship manager in Global Commercial Banking, and her husband started working from home in early 2020 due to the health crisis, while also caring for their two young daughters. With daycare centers closed, Jessica needed care for her children while working from home, so she looked into Bank of America's expanded childcare benefits after hearing about them from her manager. Eligible teammates can take advantage of the bank's expanded back-up care benefits, which include reimbursement of up to $100 a day when securing their own care provider. "It was super easy to sign up for the childcare benefit, and the reimbursement process is quick," explains Jessica. She took advantage of the opportunity to hire someone from her personal network, and was thrilled to be able to help one of the teachers at her daughters' daycare center who had lost income due to the coronavirus-related closures. "It's good for her and good for us," Jessica said. "The best part is my entire management team has been extremely supportive. The resources and empathy toward working parents make me really proud to work for Bank of America."



Hiring the next generation of leaders

Reena Shukla
Global Technology & Operations
EMEA Operations Executive

London-based Reena Shukla believes exceptional talent can be found at all levels. After completing Merrill's graduate recruitment program, she has grown her career and is now a managing director, leading the EMEA Client Services team for Global Markets. Reena is passionate about recruiting others early in their careers whose contributions can challenge the status quo and inspire new ways of thinking to strengthen our teams and client relationships — something she can relate to given her own experience with the bank's recruiting efforts. Reena is focused on hiring teammates who demonstrate a natural curiosity to learn and challenge themselves. "Recruiting fresh talent pushes boundaries within our teams and enables new ideas for the ways we serve our clients," explains Reena. Through Bank of America's Africa recruitment initiative and the U.K. government apprenticeship program, Reena has built a balanced team with both experienced and new talent, with each providing significant contributions for future success. "Hiring talent early in their careers helps develop our future leaders, something that I have experienced firsthand at our company."



Leading the way to a more inclusive environment

Adrienne Hughes
Merrill
Client Experience Executive

As Merrill's client experience executive, Adrienne Hughes recognizes the power of strong, authentic connections. She is personally committed to creating an inclusive culture that values, encourages and leverages the strength of our diversity. "Inclusion comes from celebrating our uniqueness and creating an environment where people are valued and encouraged to bring who they are to the workplace — creatively collaborating to strengthen our business," says Adrienne. Involved in several Bank of America Employee Networks, which help teammates be heard, develop leadership skills, build ties with peers and local communities and advance diversity recruitment, Adrienne has embraced her advocacy for inclusion in the workplace by using her voice and encouraging others to do the same. She has taken advantage of Bank of America's passion for open and honest discussions and hosted several courageous conversations around race, equality and economic opportunity in the Chicago market. As a member of our Women's Leadership Council and the Multicultural Women Ready to Lead Initiative, Adrienne also continues to be a leader for women's equality in the workplace. "I am proud to work for a company that invests in creating a culture where every individual is valued. I'm inspired to lead by example and drive that commitment forward."

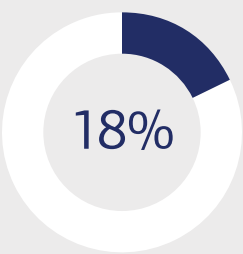


Helping teammates grow and develop fulfilling careers

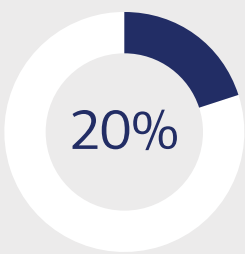
Evelyn Castillo
Consumer & Small Business
Consumer Banking Region Executive

After joining Bank of America in 2009, Evelyn Castillo, a Consumer Banking region executive, never imagined she would still be working at the same company nearly a decade later. Motivated by support from mentors as well as the many development opportunities she's discovered, Evelyn has grown her career at Bank of America in a way that takes advantage of her strengths and builds new skills. "I have been blessed to have great leaders and mentors who invested in me and my abilities. I see the impact this has had on my career, and I want to give that same opportunity to others," says Evelyn. Inspired by her experiences at the bank, she has made it her mission to mentor her teammates and develop their leadership skills. By taking advantage of the bank's many career development resources, Evelyn has been able to help develop and promote the next generation of leaders. Additionally, as a market president lead for Consumer & Small Business and member of the Hispanic/Latino Organization for Leadership and Advancement Employee Network, Evelyn is able to interact with diverse employees and connect them to areas of interest. "Making connections enables career mobility, which helps retain our talent. I'm proof you can have a lifelong career at Bank of America."

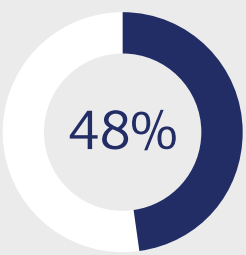
Representation of people of color across our company



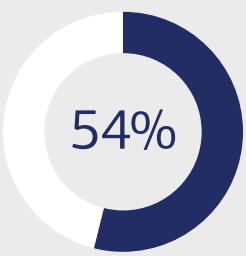
of our **management team** are people of color



of our **management levels 1–3** are people of color



of our **U.S. workforce** are people of color



of our **full-time campus hires** are people of color

Being a great place to work—2020 highlights

A critical component of how we drive Responsible Growth is making Bank of America a great place to work. See how we fulfill that commitment to our employees.

Hired 10K+ military veterans

We surpassed our goal of hiring over 10,000 military veterans, achieving our five-year commitment, with plans to maintain hiring momentum for the future.



Supporting career development

We provide an extensive portfolio of learning and leadership development opportunities to our more than 200,000 employees, including foundational and skills-based training and an enterprise-wide focus on manager development.

Hiring 10K+ from LMI communities

We hired more than 10,000 employees from LMI communities since 2018—ahead of our commitment to do so by 2023.

Up to $7,500 in tuition reimbursement

Through our tuition reimbursement program, we provide up to $7,500 (up to $5,250 tax-free) annually for eligible undergraduate or graduate courses.

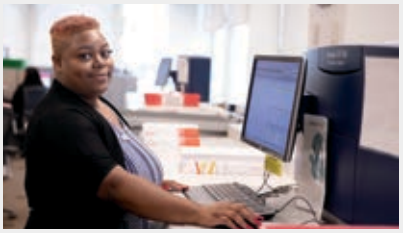


$20 minimum hourly rate

In the first quarter of 2020, we raised our minimum hourly rate of pay for U.S. employees to $20, one year earlier than planned.

Medical premiums for employees

Since 2012, there has been no increase in medical premiums for employees earning less than $50,000.



Sharing our success

For the fourth time since 2017, we recognized teammates with a special award in cash or restricted stock. In the first quarter of 2021, approximately 97% of teammates received a Delivering Together award, in addition to any regular annual incentives.

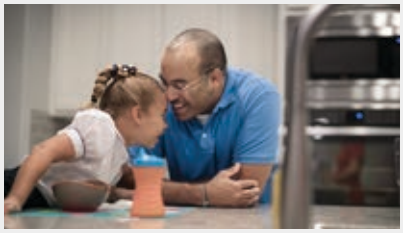
Equal pay for equal work

For teammates in comparable positions, compensation received by women, on average, was greater than 99% of that received by men; and compensation received by people of color was, on average, greater than 99% of that received by teammates who are not people of color.



$500 wellness credit

We provide a $500 credit toward medical plan premiums following completion of a wellness screening and questionnaire (or $1,000 if a covered spouse or partner also completes).



Employee Relief Fund

Employees can receive up to $2,500 in financial assistance through our Employee Relief Fund for a qualified disaster and up to $5,000 for an emergency hardship.

Investing $1 billion over four years to advance racial equality and economic opportunity

In 2020, we saw intensified passion to address the obstacles to true racial equality in the U.S. In response, we accelerated work already underway to announce a $1 billion, four-year initiative to help advance racial equality and economic opportunity with a focus on four areas:

- **Jobs and reskilling** the workforce
- Supporting minority **small business** owners
- Making **home ownership and rental housing** more affordable
- Addressing inequities in **health services**

This work is being led by Vice Chairman Anne Finucane and developed by a cross-functional team led by Global Head of ESG Andrew Plepler with the expertise and perspective of the company's Black and Hispanic Leadership councils, our local market teams and other business leaders. It recognizes that issues of racial equality and economic opportunity are deeply connected, and that understanding the past is critical to charting a path forward. Our objective is to address systemic barriers where they exist and help drive more opportunity and sustained progress.

Already, we've allocated more than $300 million (or one-third) across 91 markets and globally, including:



Investments in **61 private equity funds** across the U.S.

$150 million in funds focused on minority entrepreneurs and predominantly led by diverse fund managers



Partnerships with **more than 20 higher education institutions** and major employers

Jobs initiatives with community colleges, historically Black colleges and universities and Hispanic-serving institutions to connect students to career success



Launched Smithsonian's "Race, Community and Our Shared Future"

Program to deliver thought leadership on civil rights, social justice and economic mobility to communities across the country



Expanding opportunities for **50,000 women**

Bank of America Institute for Women's Entrepreneurship at Cornell, with a focus on women of color



Capital investments in **14 MDIs and CDFI banks**

Toward lending, housing, neighborhood revitalization and other banking services



Partnerships with CVS Health and local nonprofits

Flu vaccine vouchers in under-resourced communities and donations of PPE to community partners across the country

"We must not let the current intense demand for action die down. And we will not. Our management team, our market presidents and market executives, leaders of our company at every level, all of us can and will do more." — **CEO Brian Moynihan**



Addressing the world's challenges through sustainable finance

A conversation with Anne Finucane, Vice Chairman and Karen Fang, Global Head of Sustainable Finance

At Bank of America, sustainability is embedded in our operating model. This extends to how we support our clients through core lending and investments; equity and debt capital markets activities; the advisory services we offer; how we manage our supply chain and how we conduct our own operations. In 2020, after meeting our goal to be carbon-neutral a year early, we finalized our commitment to achieve net-zero greenhouse gas (GHG) emissions before 2050 across all scopes of emissions including those from our operations, financing activities and supply chain.

Central to our purpose as a financial services company, we will need to assist our clients in their own carbon reduction journey. To accelerate our sustainable finance work and help create a consistent perspective across all of our capabilities and product offerings, in January 2020, we established the Sustainable Markets Committee, which I co-chair along with Chief Operating Officer Tom Montag. To lead this effort, we named Karen Fang as the Global Head of Sustainable Finance. Karen and I sat down recently to talk about our progress, the business, and our goals for 2021.

Anne: Karen, we have developed a leadership position in clean energy finance, and we will discuss that later. This year, though, we saw particular interest in other aspects of sustainable finance, against a backdrop of economic and social challenges during the global health crisis. We mobilized and deployed approximately $100 billion of sustainable finance capital aligned with the United Nations (U.N.) SDGs in 2020, a significant increase from 2019 despite the global challenges, with approximately $55 billion allocated to climate finance. In addition, approximately $45 billion was allocated to Inclusive Development. This includes our significant lending and investing in affordable housing, healthcare, education and other social infrastructure as a part of our support for local communities across the U.S. Also included are the deposits and equity capital we provided to CDFIs and MDIs, and equity and fund investments into minority-owned businesses as a part of our $1 billion racial equality and economic opportunity initiative. And the global health crisis and associated challenges did offer the opportunity for some unique offerings by our company. Can you discuss that a little bit?

Karen: Yes, we are particularly proud of two innovative transactions we completed in 2020 for Bank of America that demonstrate the creativity and strength of collaboration across many of our lines of business in an effort to deliver for our clients. In May 2020, we issued a $1 billion corporate social bond focused on the coronavirus response, the first such

"The Sustainable Markets Committee gathers our capabilities across every line of business and puts them to work for our clients who are innovating and investing in the low carbon, sustainable economy."

— **Tom Montag**, Chief Operating Officer

offering by a U.S. bank. This bond was designed to provide targeted lending to healthcare institutions that are on the front lines of combatting the health crisis, and it paved the way for Bank of America to underwrite and distribute more than $50 billion of social bonds for numerous governments, agencies and public companies. This speaks to our ability to scale capital deployment for important societal needs.

In September 2020, we issued a $2 billion equality progress sustainability bond to advance racial equality, economic opportunity and environmental sustainability. The social side of the proceeds were exclusively allocated to make new and impactful investments and lending in affordable housing, healthcare, and small businesses in Black and Hispanic-Latino communities. This first-of-its-kind transaction again inspired other issuers to follow similar approaches, scaling capital for wealth creation and socioeconomic empowerment of these communities.

Some highlights on the environmental transition side include underwriting and distributing green and sustainability bonds, completing some of the largest asset finance transactions for renewable energy generation and providing financing and leasing solutions for energy efficiency projects and electric vehicles (EVs).

Bank of America's commitment to sustainable finance runs deeper than just doing transactions. Thanks to the commitment and leadership from you, our whole Management Team and all of our teammates, we are at the forefront of climate change thought leadership. We are key members of various global alliances focused on sustainable development, such as the U.N. Global Investors for Sustainable Development, the World Economic Forum Net-Zero Transition Finance Committee, His Royal Highness the Prince of Wales' Sustainable Markets Initiative, the Rocky Mountain Institute Center for Climate Aligned Finance and the 1t.org U.S. Steering Council, among others.

Anne: Let's talk a little more about "traditional" sustainable finance, if I can use that term since we've been at it now for so many years. We reached carbon neutrality in our own footprint and are on a path toward net-zero before 2050. We have reduced our energy use by 40% and our location-based GHG emissions by 50%, sourced renewable energy to power our facilities, and purchased and retired carbon offsets for those final amounts of unavoidable emissions. In keeping with our focus on the environment, we even erected the first platinum Leadership in Energy and Environmental Design (LEED) skyscraper and continue to make progress in our own real estate footprint. So our own track record means we are well positioned to (i) have a comprehensive discussion with our clients about carbon neutrality and net-zero as a business imperative; (ii) encourage clients to establish a concrete and credible glide path plan to reduce their own carbon footprints; and (iii) offer clients advisory services and financial tools to support their decarbonization efforts toward net-zero.

Karen: Exactly. In 2020, we developed the "4 R's" approach to decarbonization for our corporate clients: Reduce, Renew, Retire, and Realign. We financed energy efficiency projects that helped clients reduce their energy usage; we helped shift clients' electricity footprints from fossil fuels to renewable energy by providing debt financing, tax equity and leasing capital for wind and solar power generation; we mobilized capital for more EV production and leasing; and we financed LEED-certified construction of office facilities and manufacturing sites. We are also helping develop a more robust, voluntary carbon-offset market.

Anne: Whether it is Environmental Transition or Inclusive Development, our business focus has been to expand current activities and innovate to help advance emerging technologies. New domains and possibilities seem to be emerging at an ever faster pace. In the area of Environmental Transition, we are looking at solutions for the next frontier beyond wind, solar, and EVs including (i) clean hydrogen, fuel cells, sustainable aviation fuels and waste-to-energy; (ii) EV charging and battery infrastructure; (iii) nature and engineered solutions for carbon capture and offsets; and (iv) sustainable agriculture and better water infrastructure. Let's talk about what we're focused on in the Inclusive Development side of things.

Karen: We'll continue to help advance racial and gender equality, support healthcare as we focus on continued coronavirus response and vaccine delivery, and investing in job training and reskilling. Certain projects that we are pursuing include working with developers to create affordable housing projects that incorporate more environmental and social sustainability features and materials. Also, we are expanding our supply chain financing and banking services to more minority-owned and operated businesses.



2020 ESG highlights*

Our strong focus on environmental, social and governance (ESG) is key to how we drive Responsible Growth. We're addressing society's greatest challenges through our investments, philanthropy and responsible business operations. This helps us to serve clients, deliver returns for our shareholders and contribute to a more sustainable future.



Sustainable finance

We mobilized and deployed approximately $100 billion in capital to support the environmental transition to a low-carbon economy, as well as inclusive development focusing on affordable housing, healthcare, education and racial/gender equality.



Environmental business commitment

Our Environmental Business Initiative will direct at least $445 billion to low-carbon, sustainable business activities by 2030. Since 2007 when it was launched, we have mobilized more than $200 billion to these efforts across the globe.



Tax equity for renewables

We have been the top tax equity investor in the U.S. since 2015. Our Tax Equity renewable energy portfolio at the end of 2020 was approximately $10.1 billion. Our investments have contributed to the development of approximately 17% (33GW) of total installed renewable wind and solar energy capacity in the U.S.



Blended Finance Catalyst Pool

Our Blended Finance Catalyst Pool will provide $60 million from Bank of America to leverage additional private capital to help address the U.N. SDGs. We finalized commitments totaling $15 million in four different blended finance vehicles that will help mobilize more than $500 million in total investor funds.



Affordable homeownership

Having surpassed our initial commitment, we tripled our Bank of America Community Homeownership Commitment® to $15 billion through 2025, aiming to help more than 60,000 LMI individuals and families purchase a home. Since 2019, the initiative has helped nearly 21,000 individuals and families purchase a home and over $180 million in down payment and closing cost grants.



Community Development Banking

We provided a record $5.87 billion in loans, tax credit equity investments and other real estate development solutions through $3.62 billion in debt commitments and $2.25 billion in investments to help build strong, sustainable communities by financing affordable housing and economic development across the country. Between 2005 and 2020, we financed more than 215,000 affordable housing units.



Community development financial institutions (CDFI) lending

We originated over $394 million in loans and investments as part of our more than $1.8 billion portfolio in 256 CDFIs to finance affordable housing, economic development projects, small businesses, healthcare centers, charter schools, and other community facilities and services.



Small business lending

We provide dedicated support to meet the needs of our 13 million small business owners and are a top lender in the SBA's 504 and 7(a) programs, according to the FDIC. More than half (54%) of all small business loans booked in 2020 were made to LMI borrowers.



Sustainable client balances

We have $36.8 billion in assets in our wealth management business with a clearly defined ESG investment approach.



Green, social and sustainability bonds

We issued a $1 billion corporate social bond to support those on the front lines of the health crisis; and a first-of-its kind $2 billion equality progress sustainability bond to help advance racial equality, economic opportunity and environmental sustainability. Since 2013, Bank of America has issued $9.85 billion in eight corporate Green, Social and Sustainability Bonds. We have also been a leader in ESG-themed bond underwriting globally since 2007, having underwritten more than $75 billion on behalf of more than 225 clients, supported more than 400 deals and provided critical funding to environmental and social projects.

*Data and metrics are as of year-end 2020 unless otherwise noted.



Net-zero commitment

We are carbon neutral and purchase 100% renewable electricity. We have committed to achieving net-zero greenhouse gas emissions in our financing activities, operations and supply chain before 2050.



Climate risk and ESG disclosure

We disclose our risk and governance practices under several frameworks. On page 40, we have reported under new ESG Stakeholder Capitalism Metrics developed by the World Economic Forum's International Business Council. We issued our first report under the recommendations of the TCFD, and our first SASB report. This is in addition to publicly disclosed information about how we manage climate risk in the Management Discussion & Analysis section of our Annual Report on Form 10-K and reporting through the GRI and CDP (formerly known as Carbon Disclosure Project) global disclosure system. We also disclose our ESG strategy, policies and practices in our Environmental and Social Risk Policy Framework and Human Capital Management Report.



Arts and culture

We remain steadfast in our support of arts and culture, providing more than $50 million in support to arts and culture nonprofits around the world last year. We fulfilled all commitments in 2020, whether or not partners were open and/or their programming had been digitized, postponed or canceled.



Women's economic empowerment

We expanded opportunities for 50,000 women entrepreneurs, with a focus on women of color, to participate in the Bank of America Institute for Women's Entrepreneurship at Cornell, the only online Ivy League certificate program for women business owners in the world. More than 20,000 women are currently enrolled, representing over 85 countries, including the U.S..



Philanthropic giving

We increased our philanthropy to more than $350 million, including $100 million to support communities impacted by the health and humanitarian crisis and $250 million to drive economic mobility and social progress in the communities we serve. We continue to advance economic mobility and nonprofit leadership through our Neighborhood Builders and Neighborhood Champions programs, investing $256 million to support more than 1,000 nonprofits and 2,000 nonprofit executives since 2004. Last year, through local partnerships and our own Student Leaders program, we connected more than 4,000 young people to early employment.



Employee giving and volunteering

In response to the health and humanitarian crisis and the need to advance racial equality, we lowered our matching gift minimum to $1 and doubled our match for donations to 17 organizations focused on racial equality and economic opportunity. Last year, despite shifting to a virtual environment, our employees volunteered over 1.1 million hours and directed $65 million to communities through individual giving and the bank's matching gifts program.



Pathways

Since 2018, Bank of America's Pathways program has fueled our enterprise-wide talent pipeline, hiring more than 10,000 employees from LMI neighborhoods — well ahead of our commitment to do so by 2023. We do this through partnerships with community colleges and long-time partners such as Year Up, UnidosUS and the National Urban League.



Better Money Habits®

Through our Better Money Habits platform, we continue to connect people to relevant advice, tools and guidance that empowers them to take control of their finances. Content on the Better Money Habits website was accessed for free over 6 million times, and consumers clicked through to make an appointment more than 23,000 times. Mejores Habitos Financieros, our Spanish site, was accessed more than 1 million times. To further extend these resources in LMI communities, more than 4,300 employee volunteers serve as Better Money Habits Volunteer Champions, delivering financial know-how in partnership with local nonprofits across the U.S.

Bank of America Corporation — Financial highlights

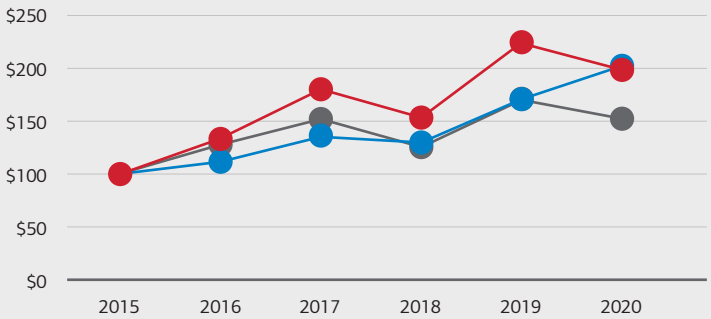
Bank of America Corporation (NYSE: BAC) is headquartered in Charlotte, North Carolina. As of December 31, 2020, we operated across the United States, its territories and more than 35 countries. Through our banking and various nonbank subsidiaries throughout the United States and in international markets, we provide a diversified range of banking and nonbank financial services and products through four business segments: Consumer Banking, Global Wealth and Investment Management, Global Banking and Global Markets.

Financial highlights ($ in millions, except per share information)

For the year	2020	2019	2018
Revenue, net of interest expense	**$ 85,528**	$ 91,244	$ 91,020
Net income	**17,894**	27,430	28,147
Earnings per common share	**1.88**	2.77	2.64
Diluted earnings per common share	**1.87**	2.75	2.61
Dividends paid per common share	**0.72**	0.66	0.54
Return on average assets	**0.67%**	1.14%	1.21%
Return on average common equity	**6.76%**	10.62%	11.04%
Return on average tangible common shareholders' equity[1]	**9.48**	14.86	15.55
Efficiency ratio	**64.55**	60.17	58.40
Average diluted common shares issued and outstanding	**8,797**	9,443	10,237

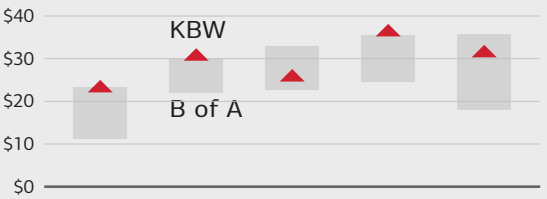
At year-end	2020	2019	2018
Total loans and leases	**$ 927,861**	$ 983,426	$ 946,895
Total assets	**2,819,627**	2,434,079	2,354,507
Total deposits	**1,795,480**	1,434,803	1,381,476
Total shareholders' equity	**272,924**	264,810	265,325
Book value per common share	**28.72**	27.32	25.13
Tangible book value per common share[1]	**20.60**	19.41	17.91
Market capitalization	**262,206**	311,209	238,251
Market price per common share	**30.31**	35.22	24.64
Common shares issued and outstanding	**8,651**	8,836	9,669
Tangible common equity ratio[1]	**6.5**	7.3	7.6

Total Cumulative Shareholder Return[2]



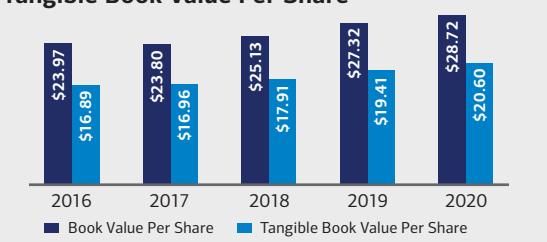
December 31	2015	2016	2017	2018	2019	2020
Bank of America Corporation	$100	$133	$181	$154	$225	**$199**
S&P 500	100	112	136	130	171	**203**
KBW Bank Sector Index	100	129	152	125	171	**153**

BAC Five-Year Stock Performance



	2016	2017	2018	2019	2020
HIGH	$23.16	$29.88	$32.84	$35.52	**$35.64**
LOW	11.16	22.05	22.73	24.56	**18.08**
▲ CLOSE	22.10	29.52	24.64	35.22	**30.31**

Book Value Per Share/ Tangible Book Value Per Share[1]



[1]Represents a non-GAAP financial measure. For more information on these measures and ratios, and a corresponding reconciliation to GAAP financial measures, see Supplemental Financial Data on page 54 and Non-GAAP Reconciliations on page 111 of the 2020 Financial Review section.

[2]This graph compares the yearly change in the Corporation's total cumulative shareholder return on its common stock with (i) the Standard & Poor's 500 Index and (ii) the KBW Bank Index for the years ended December 31, 2015 through 2020. The graph assumes an initial investment of $100 at the end of 2015 and the reinvestment of all dividends during the years indicated.

Recognition

We are honored to be recognized by organizations and media around the world for our work in driving Responsible Growth, including our ESG commitments and initiatives and our efforts to be a great place to work.

In 2020, we were recognized by Fortune as one of their 100 Best Companies to Work For, Working Mother as the number-one best company for Dads and Euromoney as the World's Best Bank for Corporate Responsibility, among several others. Below are some of our most recent awards.

Fortune
100 Best Companies to Work For (2020, 2019)

Best Big Companies to Work For (2020, 2019)
only financial services company recognized two years in a row

Best Workplaces for Women (2020, 2019)

Best Workplaces in Financial Services & Insurance (2020, 2019)

Best Workplaces for Diversity (2019)

Best Workplaces for Parents (2020, 2019)

Best Workplaces for Giving Back (2018)

Change the World (2020, 2019)
named the top global bank two years in a row

Euromoney
World's Best Bank for Corporate Responsibility (2020)

Excellence in Leadership—North America (2020)

Best Digital Bank—North America (2020)

Best Bank for Transaction Services—North America and Latin America (2020)

Best Bank for Small and Medium-Sized Enterprises—North America (2020)

World's Best Bank for Diversity and Inclusion (2019)

World's Best Bank (2018)

World's Best Bank for Corporate Social Responsibility (2017)

Asia's Best Bank for Corporate Social Responsibility (2019)

Barron's
100 Most Sustainable Companies (2020)

Top Women Advisors (2020)
recognized for the 15th consecutive year

LinkedIn
50 Top Companies in the U.S. (2019)
top ranking financial institution

Working Mother
Top Wealth Advisor Moms (2020)
125 Merrill advisors recognized

100 Best Companies (32 consecutive years)

Best Companies for Multicultural Women (2020, 2019)

Best Companies for Dads (2020, 2019)

Diversity Best Practices Inclusion Index (2020)

U.S. Environmental Protection Agency
EPA Green Power Leadership Award for Excellence in Green Power (2019)

The Banker
Most Innovative Investment Bank of the Year for Corporate Social Responsibility (2019)

Climate Leadership Awards
Innovative Partnership Certificate (2019)

Investing in Women Initiative
Catalyst Award Winner (2019)

Forbes
Corporate Responders (2020)

Top Women Advisors (2020)
240 Merrill advisors recognized

World's Best Employers (2019)

Bloomberg
Gender-Equality Index (2019)

Financial Services Gender-Equality Index (2017)

Brandon Hall
25 Human Capital Management Excellence Awards (2020)

RateMyPlacement
100 Undergraduate Employers (2019-2020)

PEOPLE Magazine
Companies that Care (2020, 2019)

AnitaB.org
Top Companies for Women Technologists (2019)

Diversity MBA Magazine
50 Out Front: Best Places for Women & Diverse Managers to Work (2020, 2019)

JUST Capital
America's Most JUST Companies (2020, 2019)

JUST 100 (2020)

Military Times
Best for Vets: Employers (2020, 2019)

Stonewall UK Workplace
Equality Index (2020, 2019)

Fatherly
Certified Best Place to Work for Dads (2019)

American Council on Renewable Energy (ACORE)
Renewable Energy Leadership Award (2019)

Dow Jones Sustainability Index
World Index (top 10% of banks) (2019)

North America Index (top 20% of banks) (2019)

UK Armed Forces Covenant
Employer Recognition Scheme Gold Award (2016-2020)

U.S. Veterans Magazine
Top Veteran-Friendly Company (2020)

Equileap
U.S. and Global Gender Equality Reports (2019)
named the leading company in U.S. for gender equality

Black Enterprise
50 Best Companies for Diversity (2018)

Dave Thomas Foundation for Adoption
100 Best Adoption-Friendly Workplace (2020, 2019)

Disability:IN and the American Association of People with Disabilities
Disability Equality Index (2020) *scored 100%*

Global Employer of the Year (2019)

National Association of Asian American Professionals
Milestone Honor Award (Asian Leadership Network, 2016)

Global Finance Magazine
Best Bank in the United States (2020)

Best Bank in North America (2020)

Best Consumer Digital Bank in the United States (2020)

Best Bank in the World (2019)

LATINA Style
Company of the Year (2020)

Top 50 Best Companies for Latinas to Work for in the U.S. (21 consecutive years)

Top 12 Companies of the Year (2019)

Top 12 Employee Resource Groups of the Year (Hispanic-Latino Organization for Leadership & Advancement, 2019)

National Association for Female Executives (NAFE)
Top Companies for Executive Women (12 years)

PR News
CSR Award for Employee Relations (2019)

CDP
A list named for the ninth year (2019)

Supplier Engagement Leaderboard (2019)

Center for Political Accountability
Trendsetter on CPA-Zicklin Index of Corporate Political Disclosure and Accountability (2016-2019)

STAKEHOLDER CAPITALISM METRICS

The index reflects our report in alignment with the Stakeholder Capitalism Metrics (the Metrics) published by the International Business Council of the World Economic Forum. We believe these Metrics help to demonstrate how our sustainable business model drives progress towards inclusive capitalism and the U.N.'s Sustainable Development Goals. In this index, we either reference existing disclosures or respond directly. We currently do not report on all of the Metrics but will continue to evaluate both core and expanded metrics for potential future additional disclosure. Our commitment is to provide investors with useful, relevant and meaningful sustainability information and we expect our disclosures to evolve over time. All reported data is as of and for year end December 31, 2020, unless otherwise noted.

INDICATES CORE METRIC

Principles of Governance

THEME	METRIC	RESPONSE
Governing Purpose	**Setting Purpose:** The company's stated purpose, as the expression of the means by which a business proposes solutions to economic, environmental, and social issues. Corporate purpose should create value for all stakeholders, including shareholders.	Our Responsible Growth strategy referenced in this 2020 Annual Report and our 2021 Proxy Statement articulates how our purpose and environmental, social and governance leadership creates stakeholder value.
	Purpose-led management: How the company's stated purpose is embedded in company strategies, policies, and goals.	
Quality of Governing Body	**Governing Body Composition:** Composition of the highest governance body and its committees by: competencies relating to economic, environmental, and social topics; executive or non-executive; independence; tenure on the governance body; number of each individual's other significant positions and commitments, and the nature of the commitments; gender; membership of under-represented social groups; stakeholder representation.	Refer to the section entitled "Proposal 1: Electing directors" in our 2021 Proxy Statement available on the Bank of America Investor Relations website at www.bankofamerica.com/investor.
	Progress against strategic milestones: Disclosure of the material strategic economic, environmental, and social milestones expected to be achieved in the following year, such milestones achieved from the previous year, and how those milestones are expected to or have contributed to long-term value.	Refer to our 2019 ESG Performance Data Summary available at www.bankofamerica.com/ESGData.
	Remuneration: **1.** How performance criteria in the remuneration policies relate to the highest governance body's and senior executives' objectives for economic, environmental and social topics, as connected to the company's stated purpose, strategy, and long-term value. **2.** Remuneration policies for the highest governance body and senior executives for the following types of remuneration: Fixed pay and variable pay, including performance-based pay, equity-based pay, bonuses, and deferred or vested shares, Sign-on bonuses or recruitment incentive payments, termination payments, clawback and retirement benefits.	Refer to the section entitled "Compensation discussion and analysis" in our 2021 Proxy Statement available on the Bank of America Investor Relations website at www.bankofamerica.com/investor.
Ethical Behavior	**Anti-corruption:** **1.** Total percentage of governance body members, employees and business partners who have received training on the organization's anti-corruption policies and procedures, broken down by region. **2.** (a) Total number and nature of incidents of corruption confirmed during the current year but related to previous years and (b) Total number and nature of incidents of corruption confirmed during the current year, related to this year. **3.** Discussion of initiatives and stakeholder engagement to improve the broader operating environment and culture, in order to combat corruption.	1. 100% of Bank of America employees are required to take training on anti-bribery and anti-corruption policies as part of Bank of America's Code of Conduct training. 2. For disclosure of significant litigation and regulatory matters, see *Note 12 — Commitments and Contingencies* on page 161 of the 2020 Financial Review section. 3. Refer to our Code of Conduct on the Bank of America Investor Relations website available at www.bankofamerica.com/investor.
	Protected ethics advice and reporting mechanisms: A description of internal and external mechanisms for: **1.** Seeking advice about ethical and lawful behaviour and organizational integrity **2.** Reporting concerns about unethical or unlawful behaviour and organizational integrity	Refer to page 13 in our Code of Conduct on the Bank of America Investor Relations website available at www.bankofamerica.com/investor.
	Monetary losses from unethical behaviour: Total amount of monetary losses as a result of legal proceedings associated with: fraud, insider trading, anti-trust, anti-competitive behaviour, market manipulation, malpractice, or violations of other related industry laws or regulations.	For disclosure of significant litigation and regulatory matters, see *Note 12 — Commitments and Contingencies* on page 161 of the 2020 Financial Review section.

THEME	METRIC	RESPONSE
Ethical Behavior (continued)	**Alignment of strategy and policies to lobbying:** The significant issues that are the focus of the company's participation in public policy development and lobbying; the company's strategy relevant to these areas of focus; and any differences between its lobbying positions, purpose, and any stated policies, goals, or other public positions.	Refer to our Political Activities disclosure available on the Bank of America Investor Relations website at www.bankofamerica.com/investor.
Risk and Opportunity Oversight	**Integrating risk and opportunity into business process:** Company risk factor and opportunity disclosures that clearly identify the principal material risks and opportunities facing the company specifically (as opposed to generic sector risks), the company appetite in respect of these risks, how these risks and opportunities have moved over time and the response to those changes. These opportunities and risks should integrate material economic, environmental, and social issues, including climate change and data stewardship.	Refer to our Environmental and Social Risk Policy Framework available at www.bankofamerica.com/ESRPF.
Stakeholder Engagement	**Material issues impacting stakeholders:** A list of the topics that are material to key stakeholders and the company, how the topics were identified, and how the stakeholders were engaged.	Refer to our ESG Materiality disclosure available at www.bankofamerica.com/ESGMateriality.

Planet*

THEME	METRIC	RESPONSE
Climate Change	**Greenhouse Gas (GHG) emissions:** For all relevant greenhouse gases (e.g. carbon dioxide, methane, nitrous oxide, F-gases etc.), report in metric tonnes of carbon dioxide equivalent (tCO_2e) GHG Protocol Scope 1 and Scope 2 emissions. Estimate and report material upstream and downstream (GHG Protocol Scope 3) emissions where appropriate.	Bank of America's 2019 greenhouse gas emissions (tCO_2e) are as follows. Since 2010, we have reduced location-based emissions 56% globally. For more information, refer to our ESG Performance Data Summary (2019) available at www.bankofamerica.com/ESGData. • Scope 1: 62,639 • Location-based Scope 2: 728,771 • Market-Based Scope 2: 17,523 • Total net Scope 1 and Market-Based Scope 2: 0 • Scope 3 Purchased Goods and Services: 2,329,208 • Scope 3 Capital Goods: 251,336 • Scope 3 Fuel- and Energy-Related Activities: 161,151 • Scope 3 Upstream Transportation and Distribution: 140,215 • Scope 3 Waste (Traditional Disposal): 22,386 • Scope 3 Business Travel: 162,457 • Scope 3 Employee Commuting: 378,088 • Scope 3 Downstream Transportation and Distribution: 1,400,000 • Scope 3 Use of Sold Products: 4,000 • Scope 3 End of Life Treatment of Sold Products: 19,000
	TCFD implementation: Fully implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). If necessary, disclose a timeline of at most three years for full implementation. Disclose whether you have set, or have committed to set GHG emissions targets that are in line with the goals of the Paris Agreement — to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C — and to achieve net-zero emissions before 2050.	In 2020, Bank of America released its Task Force on Climate-related Financial Disclosures (TCFD) Report available at www.bankofamerica.com/TCFD. In early 2021, Bank of America took the next step in our climate journey by publicly committing to achieve net zero greenhouse gas emissions before 2050 across our operations, supply chain, and financing activities. For more information, refer to www.bankofamerica.com/NetZero.
	Paris-aligned GHG emissions targets: Define and report progress against time-bound science-based GHG emissions targets that are in line with the goals of the Paris Agreement — to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C. This should include defining a date before 2050 by which you will achieve net-zero greenhouse gas emissions and interim reduction targets based on the methodologies provided by the Science Based Targets initiative if applicable.	To reach the goals of the Paris Agreement, we are developing a strategy across our entire value chain which includes setting interim emission reduction targets based on science, engaging with clients on climate goals and supporting climate innovation. Our net zero goal includes operations (Scope 1 and 2), supply chain (Scope 3 upstream emissions) and all material emissions attributed to our loans and investments (Scope 3 investments). For more information, refer to www.bankofamerica.com/NetZero.
	Impact of Greenhouse gas emissions: Report wherever material along the value chain (GHG protocol Scopes 1, 2 & 3), the valued societal impact of greenhouse gas emissions. Disclose the estimate of the social/societal cost of carbon used and the source or basis for this estimate.	The societal impact of Bank of America's Scope 1, Scope 2 (location-based), and Scope 3 (Categories 1–7, 9, 11–12) emissions in 2019 was estimated to be $238 million. This figure was calculated using the EPA's 2020 social cost of carbon of $42/metric ton CO_2 (3% discount rate, reported in 2007 USD).
Fresh water availability	**Water consumption and withdrawal in water-stressed areas:** Report for operations where material, mega litres of water withdrawn, mega litres of water consumed and the percentage of each in regions with high or extremely high baseline water stress according to WRI Aqueduct water risk atlas tool. Estimate and report the same information for the full value chain (upstream and downstream) where appropriate.	In 2019, Bank of America withdrew 7,550 and consumed 1,630 mega liters of water from our global operations. Of this, 38% of withdrawals and 41% of consumption were from regions with high or extremely high baseline water stress according to the WRI Aqueduct water risk atlas tool.

THEME	METRIC	RESPONSE
Nature Loss	**Land use and ecological sensitivity:** Report the number and area (in hectares) of sites owned, leased or managed in or adjacent to protected areas and/or key biodiversity areas (KBA).	In 2019, Bank of America had 8 active U.S. sites that intersected with areas protected for biodiversity. The area of these buildings is 6,900 square meters. Only U.S. sites are included in this analysis; U.S. sites make up over 90% of Bank of America's real estate footprint. Sites were overlaid on the U.S. Geological Survey's Protected Areas Database (PADUS) to understand intersection with protected areas.
Air pollution	**Air pollution:** Report wherever material along the value chain: Nitrogen oxides (NO_x), sulphur oxides (SO_x), particulate matter and other significant air emissions. Wherever possible, estimate the proportion of specified emissions that occur in or adjacent to urban/densely populated areas.	Bank of America's 2019 air pollution emissions (metric tons) are as follows. These air pollution emissions are from all of our sites globally and are not specific to urban/densely populated areas. For more information, refer to our 2019 ESG Performance Data Summary available at www.bankofamerica.com/ESGData. • SO_x: 1 • NO_x: 20 • CO: 32 • VOC: 2 • Particulate Matter: 3
	Impact of air pollution: Report wherever material along the value chain, the valued impact of air pollution, including nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter and other significant air emissions.	The valued impact of Bank of America's air pollution (SO_x, NO_x, CO, VOCs, and PM) in 2019 was estimated to be $146,000. This figure was calculated using the social cost factors of each pollutant as reported in the World Resources Institute's Transport Emissions & Social Cost Assessment (TESCA) Tool v1.0. These social cost factors are weighted averages based on a meta-analysis of international academic studies.

*2020 Environmental Data will be published in Q2 2021.

Prosperity

THEME	METRIC	RESPONSE
Employment and wealth generation	**Absolute number and rate of employment:** **1.** Total number and rate of new employee hires during the reporting period, by age group, gender, other indicators of diversity and region. **2.** Total number and rate of employee turnover during the reporting period, by age group, gender, other indicators of diversity and region.	**External Hires** **Diversity**: Female 51%; POC 59%; Black/ African American 17%; Hispanic/Latino 27% **Region**: U.S. 84%; APAC 12%; EMEA 3%; LATAM 0%; Canada 0% **Turnover** **Diversity**: **Total 7%**; Female 6%; POC 7%; Black/ African American 7%; Hispanic/Latino 7% **Region**: U.S. 7%; APAC 5%; EMEA 5%; LATAM 4%; Canada 4% In 2020, turnover was at extremely low levels given the pandemic, however we would not assume these levels to remain in the future. While external research has found that women are dropping out of the workforce at a higher rate than men, we have not experienced this turnover at Bank of America.
	Economic Contribution: **1.** Direct economic value generated and distributed (EVG&D) — on an accrual basis, covering the basic components for the organization's global operations, ideally split out by: a. Revenue b. Operating Costs c. Employee wages and benefits d. Payments to providers of capital e. Payments to government f. Community Investment. **2.** Financial assistance received from the government — Total monetary value of financial assistance received by the organization from any government during the reporting period.	1a–d. Refer to *Financial Statements and Notes* beginning on page 116 of the 2020 Financial Review section. 1e. Refer to Total tax paid metric. 1f. 2020 Total philanthropic giving was $350 million. 2. See the company's response for the Total Tax Paid metric for more information about certain income tax credits that the company does not consider to be nor includes in the response as financial assistance received from a government.

THEME	METRIC	RESPONSE
Wealth creation and Employment	**Financial investment contribution disclosure:** **1.** Total capital expenditures (CapEx) minus depreciation supported by narrative to describe the company's investment strategy. **2.** Share buybacks plus dividend payments supported by narrative to describe the company's strategy for returns of capital to shareholders.	1. We made $2.74 billion in fixed asset capital investments ($0.83 billion net of depreciation) primarily related to our real estate portfolio and technology expenditures. Our real estate investments focused on items that will allow us to bring teammates together to drive greater collaboration and efficiencies in support of our effort to deliver one company to our clients. We invested in modernizing sites across the portfolio while also providing health and safety resources to all locations to support our teammates. We also continue to invest in the expansion and modernization of our financial center network. Additionally, our technology purchases represent hardware and software to support ongoing investments in the Bank of America technology infrastructure and represent efforts to continue to support customers, clients, and employees. 2. For more information outlining our return of capital to shareholders, see *Note 13 — Shareholders' Equity* on page 166 of the 2020 Financial Review section.
Community and social vitality	**Total tax paid:** The total global tax borne by the company, including corporate income taxes, property taxes, non-creditable VAT and other sales taxes, employer-paid payroll taxes and other taxes that constitute costs to the company, by category of taxes.	The following table reflects the approximate amount of each category of tax borne by the company globally. U.S. income tax law provides investors in affordable housing projects, renewable energy projects and other activities that further ESG principles with credits that can reduce income taxes otherwise owed. These investments generally involve substantial pre-tax losses. The amount shown in the table for Corporate Income Taxes paid would have been approximately $3 billion higher were it not for these credits.
Innovation in better products and services	**Total R&D expenses ($):** Total costs related to research and development.	While R&D expenses are indicative of a company's investment in innovation and producing better products and services for their clients, it is not the only way to measure a company's efforts to innovate new products and services and to be fit for the future. For example, Bank of America is in the midst of a 10-year $300B commitment to finance the transition to a low-carbon economy including the adoption of low-carbon technologies such as resource-efficient building construction, renewable energy generation, sustainable transportation such as electric vehicles and charging infrastructure, and resource-efficient agriculture. We are also dedicating significant financial, intellectual, philanthropic and catalytic capital to support the advancement of developing technologies, such as carbon finance, sustainable agriculture and biofuels, water infrastructure, clean hydrogen, waste-to-energy, and carbon capture sequestration. In addition to our financing commitment referenced above, we invest heavily in technology development to meet the needs of the Corporation in support of LRR (Laws, Rules, Regulations), Data Remediation, Resiliency and Stability, clients / new products and efficiencies. We spent $3.5B on these items during 2020. Bank of America is also granted patents by the U.S. Patent Office. In 2020, we filed 722 patent applications and separately received 444 patents for the products and services we bring to our clients including innovations in information security, ATM technology, data integrity and monitoring using artificial intelligence (AI) or machine learning, fully functioning payment instruments, network management and network traffic analysis. The bank is one of the top 15 holders of U.S. banking-related patents and applications.

Global Tax Paid in 2020
($ in billions)

Corporate Income Taxes	2.9
Property Taxes	0.2
Non-creditable VAT and Other Sales Taxes	0.6
Employer-paid Payroll Taxes	1.7
Other Taxes	0.8
Total	**6.2**

People

THEME	METRIC	RESPONSE
Dignity and equality	**Diversity and inclusion (%):** Percentage of employees per employee category, per age group, gender and other indicators of diversity (e.g. ethnicity).	Refer to pages 11 & 27 in our 2020 Human Capital Management Report available on the Bank of America Investor Relations website at www.bankofamerica.com/investor.
	Pay equality: Ratio of the basic salary and remuneration for each employee category by significant locations of operation for priority areas of equality: women to men; minor to major ethnic groups; and other relevant equality areas.	Refer to the Equal Pay for Equal Work Section in our 2021 Proxy Statement available on the Bank of America Investor Relations website at www.bankofamerica.com/investor. We conduct rigorous analysis with outside experts to examine individual employee pay before year-end compensation decisions are finalized adjusting compensation where appropriate. The results of our equal pay for equal work review are disclosed in the Proxy Statement. Our analysis focuses on total compensation and includes geographies where we have significant operations for women and covers the U.S. for people of color.
	Wage level (%): **1.** Ratios of standard entry-level wage by gender compared to local minimum wage **2.** Ratio of CEO's total annual compensation to median total annual compensation of all employees (excluding the CEO)	1. We are an industry leader in establishing an internal minimum rate of pay above all mandated minimums for our U.S. hourly teammates, and have made regular increases over the past several years. Our minimum hourly wage for U.S. teammates was raised to $20 in the first quarter of 2020, more than one year earlier than planned. We compare our average U.S. hourly pay and benefits to living wage standards utilizing MIT's Living Wage Calculator. The Living Wage calculator is a market based approach that measures the basic needs of a family including items such as food, childcare, health insurance and housing costs. We are above the living wage for a family of four in all of our U.S. markets when we consider our average hourly pay plus benefits in alignment with the living wage definition. 2. Refer to the section entitled "CEO pay ratio" in our 2021 Proxy Statement on the Bank of America Investor Relations website available at www.bankofamerica.com/investor.
	Risk for incidents of child, forced or compulsory labor: An explanation of the operations and suppliers considered to have significant risk for incidents of child labor, forced or compulsory labor. Such risks could emerge in relation to type of operation (such as manufacturing plant) and type of supplier; or countries or geographic areas with operations and suppliers considered at risk.	Refer to our 2019 Modern Slavery Act Statement available at www.bankofamerica.com/ModernSlaveryAct.
	Discrimination and Harassment Incidents (#) and the Total Amount of Monetary Losses ($): Number of discrimination and harassment incidents, status of the incidents and actions taken and the total amount of monetary losses as a result of legal proceedings associated with (1) law violations and (2) employment discrimination.	For disclosure of significant litigation and regulatory matters, see *Note 12 — Commitments and Contingencies* on page 161 of the 2020 Financial Review section.
	Freedom of Association and Collective Bargaining at Risk (%): **1.** Percentage of active workforce covered under collective bargaining agreements **2.** An explanation of the assessment performed on suppliers for which the right to freedom of association and collective bargaining is at risk including measures taken by the organization to address these risks.	1. No U.S.-based employees are subject to collective bargaining agreements. 2. We do not currently conduct this assessment.
Health and well being	**Health and Safety (%):** **1.** The number and rate of fatalities as a result of work-related injury; high-consequence work-related injuries (excluding fatalities); recordable work-related injuries, main types of work-related injury; and the number of hours worked. **2.** An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services and the scope of access provided for employees and workers.	1. This metric is not material for the banking industry. 2. Refer to pages 20–23 of our 2020 Human Capital Management Report on the Bank of America Investor Relations website available at www.bankofamerica.com/investor.
Skills for the future	**Training provided (#, $):** **1.** Average hours of training per person that the organization's employees have undertaken during the reporting period, by gender and employee category (total number of trainings provided to employees divided by the number of employees). **2.** Average training and development expenditure per full time employee.	1. Training Hours Per Person **Total 42** Female 47 POC 54 Black/ African American 53 Hispanic/Latino 66 2. $1,600 per employee
	Number of unfilled "Skilled" positions (#, %): **1.** Number of unfilled "Skilled" positions (#) **2.** Percentage of unfilled "Skilled" positions for which the company will hire unskilled candidates and train them. (%).	Bank of America is committed to creating opportunities for our current and prospective employees to grow and develop, including creating avenues for reskilling for specialized jobs. For example, we have hired more than 10,000 individuals from low- to moderate-income communities through our Pathways career program. For more information on how we attract and develop talent, refer to pages 15–18 of our Human Capital Management report available on the Bank of America Investor Relations website at www.bankofamerica.com/investor.

BANK OF AMERICA

2020 Financial Review

Financial Review
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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 our 2020 Annual Report on Form 10-K: the Corporation's potential judgments, damages, penalties, fines and reputational damage resulting from pending or future litigation, regulatory proceedings and enforcement actions; 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, including as a result of our participation in and execution of government programs related to the Coronavirus Disease 2019 (COVID-19) pandemic; 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 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; 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 regulations, other guidance or additional information on the impact from the Tax Cuts and Jobs Act; 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 impact on the Corporation's business, financial condition and results of operations from the United Kingdom's exit from the European Union; the impact of climate change; the impact of any future federal government shutdown and uncertainty regarding the federal government's debt limit or changes to the U.S. presidential administration and Congress; the emergence of widespread health emergencies or pandemics, including the magnitude and duration of the COVID-19 pandemic and its impact on the 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, 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, "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

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America, National Association (Bank of America, N.A. or BANA) charter. At December 31, 2020, the Corporation had $2.8 trillion in assets and a headcount of approximately 213,000 employees.

As of December 31, 2020, we served clients through operations across the U.S., its territories and approximately 35 countries. Our retail banking footprint covers all major markets in the U.S., and we serve approximately 66 million consumer and small business clients with approximately 4,300 retail financial centers, approximately 17,000 ATMs, and leading digital banking platforms (www.bankofamerica.com) with more than 39 million active users, including approximately 31 million active mobile users. We offer industry-leading support to approximately three million small business households. Our *GWIM* businesses, with client balances of $3.3 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

In June 2020, the Board of Governors of the Federal Reserve System (Federal Reserve) notified BHCs of their 2020 Comprehensive Capital Analysis and Review (CCAR) supervisory stress test results. Due to economic uncertainty resulting from the Coronavirus Disease 2019 (COVID-19) pandemic (the pandemic), the Federal Reserve required all large banks to update and resubmit their capital plans in November 2020 based on the Federal Reserve's updated supervisory stress test scenarios. The results of the additional supervisory stress tests were published in December 2020.

The Federal Reserve also required large banks to suspend share repurchase programs during the second half of 2020, except for repurchases to offset shares awarded under equity-based compensation plans, and to limit common stock dividends to existing rates that did not exceed the average of the last four quarters' net income. In December 2020, the Federal Reserve announced that beginning in the first quarter of 2021, large banks would be permitted to pay common stock dividends at existing rates and to repurchase shares in an amount that, when combined with dividends paid, does not exceed the average of net income over the last four quarters.

On January 19, 2021, we announced that the Board of Directors (the Board) declared a quarterly common stock dividend of $0.18 per share, payable on March 26, 2021 to shareholders of record as of March 5, 2021. We also announced that the Board authorized the repurchase of $2.9 billion in common stock through March 31, 2021, plus repurchases to offset shares awarded under equity-based compensation plans during the same period, estimated to be approximately $300 million. This authorization equals the maximum amount allowed by the Federal Reserve for the period. For more information, see Capital Management on page 73.

COVID-19 Pandemic

In the first quarter of 2020, the World Health Organization declared the outbreak of COVID-19 a pandemic. In an attempt to contain the spread and impact of the pandemic, travel bans and restrictions, quarantines, shelter-in-place orders and other limitations on business activity were implemented. Additionally, there has been a decline in global economic activity, reduced U.S. and global economic output and a deterioration in macroeconomic conditions in the U.S. and globally. This has resulted in, among other things, higher rates of unemployment and underemployment and caused volatility and disruptions in the global financial markets, including the energy and commodity markets. Although vaccines have been approved for immunization against COVID-19 in certain countries and restrictive measures have been eased in certain areas, COVID-19 cases have significantly increased in recent months in the U.S. and many regions of the world compared to earlier levels. Businesses, market participants, our counterparties and clients, and the U.S. and global economies have been negatively impacted and are likely to be so for an extended period of time, as there remains significant uncertainty about the timing and strength of an economic recovery.

To address the economic impact in the U.S., in March and April 2020, four economic stimulus packages were enacted to provide relief to businesses and individuals, including the Coronavirus Aid, Relief, and Economic Security Act (CARES Act). Among other measures, the CARES Act established the Small Business Administration (SBA) Paycheck Protection Program (PPP), which provides loans to small businesses to keep their employees on payroll and make other eligible payments. The original funding for the PPP under the CARES Act was fully allocated by mid-April 2020, with additional funding made available on April 24, 2020 under the Paycheck Protection Program and Health Care Enhancement Act. In December 2020, an additional economic stimulus package was included as part of the Consolidated Appropriations Act of 2021 (the Consolidated Appropriations Act), which provides relief to individuals and businesses. This relief included additional funding for the PPP under the Economic Aid to Hard-Hit Small Businesses, Nonprofits, and Venues Act (the Economic Aid Act).

In response to the pandemic, the Corporation has implemented protocols and processes to execute its business continuity plans and help protect its employees and support its clients. The Corporation is managing its response to the pandemic according to its Enterprise Response Framework, which invokes centralized management of the crisis event and the integration of its response. The CEO and key members of the Corporation's management team meet regularly with co-leaders of the Executive Response Team, which is composed of senior executives across the Corporation, to help drive decisions, communications and consistency of response across all businesses and functions. We are also coordinating with global, regional and local authorities and health experts, including the U.S. Centers for Disease Control and Prevention (CDC) and the World Health Organization.

Additionally, we have implemented a number of measures to assist our employees, clients and the communities we serve as discussed below.

Employees

We are providing support to our teammates to help promote the health and safety of our employees and help to ensure our protocols remain aligned to current guidance by monitoring guidance from the CDC, medical boards and health authorities and sharing such guidance with our employees. We are also operating our businesses from remote locations and leveraging our business continuity plans and capabilities.

The Corporation has globally implemented a work-from-home posture, which has resulted in the substantial majority of our employees working from home, and pre-planned contingency strategies for site-based operations for our remaining employees. We continue to evaluate our continuity plans and work-from-home strategy in an effort to best protect the health and safety of our employees.

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Clients

We continue to leverage our business continuity plans and capabilities to service our clients and meet our clients' financial needs by offering assistance to clients affected by the pandemic, including providing access to credit and the important financial services on which our clients rely. We are also participating in the programs created by the CARES Act and Federal Reserve lending programs for businesses, including originating PPP loans. We have also participated in the Main Street Lending Program, which ended on January 8, 2021. While most of our deferral programs expired in the third quarter of 2020, we continue to offer assistance on a case-by-case basis when requested by clients affected by the pandemic.

As of December 31, 2020, we had approximately 332,000 PPP loans outstanding with a carrying value of $22.7 billion, which were recorded in the *Consumer*, *GWIM* and *Global Banking* segments. Since the PPP's inception through February 17, 2021, borrowers have submitted applications for forgiveness to us for approximately 113,000 PPP loans with balances totaling $10.9 billion. We have submitted approximately 72,000 PPP loans with balances totaling $8.5 billion to the SBA for repayment, of which we have received to date $5.4 billion in repayment from the SBA. Additionally, as of February 17, 2021, we have originated $4.1 billion in PPP loans under the Economic Aid Act. For more information on PPP loans, see Credit Risk Management on page 84, and for more information on accounting for PPP loans and loan modifications under the CARES Act, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Community Partners

We continue to support the communities where we live and work by engaging in various initiatives to help those affected by COVID-19. These initiatives include committing resources to provide medical supplies, food and other necessities for those in need. We are also supporting racial equality, economic opportunity and environmental sustainability through direct equity investments in minority-owned depository institutions, equity investments in minority entrepreneurs, businesses and funds, as well as other initiatives.

Risk Management

We continue to manage the increased operational risk related to the execution of our business continuity plans in accordance with our Enterprise Response Framework, Risk Framework and Operational Risk Management Program. For more information, see Managing Risk on page 70.

Loan Modifications

The Corporation has implemented various consumer and commercial loan modification programs to provide its borrowers relief from the economic impacts of COVID-19. Based on guidance in the CARES Act that the Corporation adopted, COVID-19 related modifications to consumer and commercial loans that were current as of December 31, 2019 are exempt from troubled debt restructuring (TDR) classification under accounting principles generally accepted in the United States of America (GAAP). In addition, the bank regulatory agencies issued interagency guidance stating that COVID-19 related short-term modifications (i.e., six months or less) granted to consumer or commercial loans that were current as of the loan modification program implementation date are not TDRs. In December 2020, the Consolidated Appropriations Act amended the CARES Act by extending the exemption from TDR classification for COVID-19 related modifications from December 31, 2020 to the earlier of January 1, 2022 or 60 days after the national emergency has ended. For more information, 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.

We have provided borrowers with relief from the economic impacts of COVID-19 through payment deferral and forbearance programs. A significant portion of deferrals expired during the second half of 2020, reflecting a decline in customer requests for assistance. As of February 17, 2021, deferred consumer and small business loans recorded on the Consolidated Balance Sheet totaled $6.8 billion, predominantly consisting of $6.4 billion of residential mortgage and home equity loans, including loans serviced by others, that are well-collateralized.

Other Related Matters

Although the macroeconomic outlook improved modestly during the second half of 2020, the future direct and indirect impact of COVID-19 on our businesses, results of operations and financial condition of the Corporation remains highly uncertain. Should current economic conditions persist or deteriorate, this macroeconomic environment will have a continued adverse effect on our businesses and results of operations and could have an adverse effect on our financial condition. For more information on how the risks related to the pandemic may adversely affect our businesses, results of operations and financial condition, see Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

LIBOR and Other Benchmark Rates

Following the 2017 announcement by the U.K.'s Financial Conduct Authority (FCA) that it would no longer compel participating banks to submit rates for the London Interbank Offered Rate (LIBOR) after 2021, regulators, trade associations and financial industry working groups have identified recommended replacement rates for LIBOR, as well as other Interbank Offered Rates (IBORs), and have published recommended conventions to allow new and existing products to incorporate fallbacks or that reference these Alternative Reference Rates (ARRs). The continuation of all British Pound Sterling, Euro, Swiss Franc and Japanese Yen LIBOR settings and one-week and two-month U.S. dollar LIBOR settings on the current basis are expected to terminate at the end of December 2021, and the remaining U.S. dollar LIBOR settings (i.e., overnight, one month, three month, six month and 12 month) are expected to terminate at the end of June 2023.

As a result of this and other announcements, financial benchmark reforms, regulatory guidance and changes in short-term interbank lending markets more generally, a major transition is in progress in global financial markets with respect to the replacement of IBORs and certain benchmarks. The transition of IBORs to ARRs is a complex process impacting a variety of global financial markets and our business and operations.

IBORs are 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. The discontinuation of IBORs requires us to transition a significant number of IBOR-based products and contracts, including related hedging arrangements. In response, the Corporation established an enterprise-wide IBOR transition program led by senior management in early 2018. This program, which is led by the Corporation's Chief Operating Officer, includes active involvement of senior management and regular reports to the Enterprise Risk Committee (ERC). The program is intended to address the Corporation's industry and regulatory engagement, client and financial contract changes, internal and external

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communications, technology and operations modifications, introduction of new products, migration of existing clients, and program strategy and governance. In addition, the program is designed to monitor a variety of scenarios, including operational risks associated with insufficient preparation by individual market participants or the overall market ecosystem, volatility along the Secured Overnight Financing Rate (SOFR) curve, development and adoption of credit-sensitive and other rates, regulatory and legal uncertainty with respect to various matters including contract continuity, access by market participants to liquidity in certain products, and IBOR continuity beyond December 2021.

As of February 1, 2021, a significant majority of the aggregate notional amount of our LIBOR-based products and contracts maturing after 2021 include or have been updated to include fallbacks to ARRs based on market driven protocols, regulatory guidance and industry-recommended fallback provisions and related mechanisms. For certain of the remaining products and contracts, the transition will be more complex, particularly where there is no industry-wide protocol or similar mechanism. The Corporation is executing transition plans that are intended to be in line with applicable major industry-wide IBOR product cessation and launch milestones recommended by the Alternative Reference Rates Committee, a group of private market participants and official sector entities convened by the Federal Reserve and the Federal Reserve Bank of New York, and the Bank of England Sterling Risk Free Rate Working Group, other than the cessation of LIBOR-based adjustable-rate consumer mortgages. The Corporation plans to no longer offer these mortgages and launch SOFR-based adjustable-rate consumer mortgages by the end of the first quarter of 2021.

The Corporation is executing product and client roadmaps that it believes align with industry-recommended and regulatory milestones, and the Corporation has 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 presents. As the transition to ARRs evolves, the Corporation continues to monitor and participate in the development and usage of certain ARRs, including SOFR, the Euro Short Term Rate and the Sterling Overnight Index Average (SONIA). The Corporation's key transition efforts to date include issuances of debt and deposits linked to SOFR and SONIA by the Corporation, facilitating debt issuances linked to ARRs by clients and secondary market liquidity for products linked to ARRs, originating and arranging loans linked to ARRs, including hedging arrangements, executing, trading, market making and clearing ARR-based derivatives, and launching capabilities and services to support the issuance and trading in products indexed to certain ARRs. The Corporation updated its operational models, systems, procedures and internal infrastructure in connection with the transition to ARRs by the central clearing counterparties. In October 2020, the Corporation and certain of its subsidiaries adhered to the International Swaps and Derivatives Association, Inc. 2020 IBOR Fallbacks Protocol, effective January 25, 2021, which provides a mechanism to enable market participants to incorporate fallbacks for certain legacy non-cleared derivatives linked to certain IBORs.

Additionally, the Corporation is continuing to evaluate potential regulatory, tax and accounting impacts of the transition, including guidance published and/or proposed by the Internal Revenue Service and Financial Accounting Standards Board, engage impacted clients in connection with the transition to ARRs and work actively with global regulators, industry working groups and trade associations to develop strategies for an effective transition to ARRs. For more information on the expected replacement of LIBOR and other benchmark rates, see Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

U.K. Exit from the EU

On January 31, 2020, the U.K. formally exited the European Union (EU), and a transition period began during which time the U.K. and the EU negotiated a trade agreement and other terms associated with their future relationship. The transition period ended on December 31, 2020.

We conduct business in Europe, the Middle East and Africa primarily through our subsidiaries in the U.K., Ireland and France and implemented changes to enable us to continue to operate in the region, including establishing a bank and broker-dealer in the EU, as well as minimize the potential for any operational disruption. As the global economic impact of the U.K.'s withdrawal from the EU remains uncertain and could result in regional and global financial market disruptions, we continue to assess potential operational, regulatory and legal risks. For more information, see Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

Financial Highlights

Effective January 1, 2020, we adopted the new accounting standard on current expected credit losses (CECL), under which the allowance is measured based on management's best estimate of lifetime expected credit losses (ECL). Prior-year periods presented reflect measurement of the allowance based on management's estimate of probable incurred credit losses. For more information, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Table 1 Summary Income Statement and Selected Financial Data

(Dollars in millions, except per share information)	2020	2019
Income statement		
Net interest income	$ 43,360	$ 48,891
Noninterest income	42,168	42,353
Total revenue, net of interest expense	85,528	91,244
Provision for credit losses	11,320	3,590
Noninterest expense	55,213	54,900
Income before income taxes	18,995	32,754
Income tax expense	1,101	5,324
Net income	17,894	27,430
Preferred stock dividends	1,421	1,432
Net income applicable to common shareholders	$ 16,473	$ 25,998
Per common share information		
Earnings	$ 1.88	$ 2.77
Diluted earnings	1.87	2.75
Dividends paid	0.72	0.66
Performance ratios		
Return on average assets [1]	0.67 %	1.14 %
Return on average common shareholders' equity [1]	6.76	10.62
Return on average tangible common shareholders' equity [2]	9.48	14.86
Efficiency ratio [1]	64.55	60.17
Balance sheet at year end		
Total loans and leases	$ 927,861	$ 983,426
Total assets	2,819,627	2,434,079
Total deposits	1,795,480	1,434,803
Total liabilities	2,546,703	2,169,269
Total common shareholders' equity	248,414	241,409
Total shareholders' equity	272,924	264,810

[1] For definitions, see Key Metrics on page 196.

[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, see Non-GAAP Reconciliations on page 111.

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Net income was $17.9 billion or $1.87 per diluted share in 2020 compared to $27.4 billion or $2.75 per diluted share in 2019. The decline in net income was primarily due to higher provision for credit losses driven by the weaker economic outlook related to COVID-19 and lower net interest income.

For discussion and analysis of our consolidated and business segment results of operations for 2019 compared to 2018, see the Financial Highlights and Business Segment Operations sections in the MD&A of the Corporation's 2019 Annual Report on Form 10-K.

Net Interest Income

Net interest income decreased $5.5 billion to $43.4 billion in 2020 compared to 2019. Net interest yield on a fully taxable-equivalent (FTE) basis decreased 53 basis points (bps) to 1.90 percent for 2020. The decrease in net interest income was primarily driven by lower interest rates, partially offset by reduced deposit and funding costs, the deployment of excess deposits into securities and an additional day of interest accrual. Assuming continued economic improvement and based on the forward interest rate curve as of January 19, 2021, when we announced quarterly and annual results for the periods ended December 31, 2020, we expect net interest income to be higher in the second half of 2021 as compared to both the second half of 2020 and the first half of 2021. For more information on net interest yield and the FTE basis, see Supplemental Financial Data on page 54, and for more information on interest rate risk management, see Interest Rate Risk Management for the Banking Book on page 105.

Noninterest Income

Table 2 Noninterest Income

(Dollars in millions)	2020	2019
Fees and commissions:		
Card income	$ 5,656	$ 5,797
Service charges	7,141	7,674
Investment and brokerage services	14,574	13,902
Investment banking fees	7,180	5,642
Total fees and commissions	34,551	33,015
Market making and similar activities	8,355	9,034
Other income	(738)	304
Total noninterest income	**$ 42,168**	$ 42,353

Noninterest income decreased $185 million to $42.2 billion in 2020 compared to 2019. The following highlights the significant changes.

- Card income decreased $141 million primarily due to lower levels of consumer spending driven by the impact of COVID-19, partially offset by higher income related to the processing of unemployment insurance.
- Service charges decreased $533 million primarily due to higher deposit balances and lower client activity due to the impact of COVID-19.
- Investment and brokerage services income increased $672 million primarily due to higher client transactional activity, higher market valuations and assets under management (AUM) flows, partially offset by declines in AUM pricing.
- Investment banking fees increased $1.5 billion primarily driven by higher equity issuance fees.
- Market making and similar activities decreased $679 million primarily due to the impact of lower U.S. interest rates on certain risk management derivatives, partially offset by increased client activity and strong trading performance in fixed income, currencies and commodities (FICC).
- Other income decreased $1.0 billion primarily due to lower equity investment income, higher partnership losses on tax credit investments, primarily affordable housing and renewable energy, partially offset by higher gains on loan sales and sales of debt securities.

Provision for Credit Losses

The provision for credit losses increased $7.7 billion to $11.3 billion in 2020 compared to 2019 primarily driven by higher ECL due to a weaker economic outlook related to COVID-19. For more information on the provision for credit losses, see Allowance for Credit Losses on page 99.

Noninterest Expense

Table 3 Noninterest Expense

(Dollars in millions)	2020	2019
Compensation and benefits	$ 32,725	$ 31,977
Occupancy and equipment	7,141	6,588
Information processing and communications	5,222	4,646
Product delivery and transaction related	3,433	2,762
Marketing	1,701	1,934
Professional fees	1,694	1,597
Other general operating	3,297	5,396
Total noninterest expense	**$ 55,213**	$ 54,900

Noninterest expense increased $313 million to $55.2 billion in 2020 compared to 2019. The increase was primarily due to higher operating costs related to COVID-19, merchant services expenses, which were previously recorded in other income as part of joint venture net earnings, and higher activity-based expenses due to increased client activity, partially offset by a $2.1 billion pretax impairment charge related to the notice of termination of the merchant services joint venture in 2019.

Income Tax Expense

Table 4 Income Tax Expense

(Dollars in millions)	2020	2019
Income before income taxes	$ 18,995	$ 32,754
Income tax expense	1,101	5,324
Effective tax rate	5.8 %	16.3 %

Income tax expense was $1.1 billion for 2020 compared to $5.3 billion in 2019, resulting in an effective tax rate of 5.8 percent compared to 16.3 percent.

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The change in the effective tax rate for 2020 was driven by the impact of our recurring tax preference benefits on lower levels of pretax income. These benefits primarily consist of tax credits from environmental, social and governance (ESG) investments in affordable housing and renewable energy, aligning with our responsible growth strategy to address global sustainability challenges. Excluding tax credits related to our ESG investment activity, the effective tax rate for 2020 would have been 21 percent.

The 2020 rate also included the impact of the U.K. tax law change, whereby on July 22, 2020, the U.K. enacted a repeal of the final two percent of scheduled decreases in the U.K. corporation tax rate, which had been previously enacted. This change will unfavorably affect income tax expense on future U.K. earnings, and requires a reversal of the adjustment to the U.K. net deferred tax assets recognized at the time the tax rate decreases were originally enacted. Accordingly, during the third quarter of 2020, the Corporation recorded an income tax benefit of approximately $700 million along with a corresponding increase to the U.K. net deferred tax assets.

The effective tax rate for 2019 included net tax benefits primarily related to the resolution of various tax controversy matters.

Absent unusual items, we expect the effective tax rate for 2021 to be in the range of 10 – 12 percent, reflecting tax credits related to our ESG investment activity.

Balance Sheet Overview

Table 5 Selected Balance Sheet Data

(Dollars in millions)	December 31 2020	2019	% Change
Assets			
Cash and cash equivalents	**$ 380,463**	$ 161,560	135 %
Federal funds sold and securities borrowed or purchased under agreements to resell	**304,058**	274,597	11
Trading account assets	**198,854**	229,826	(13)
Debt securities	**684,850**	472,197	45
Loans and leases	**927,861**	983,426	(6)
Allowance for loan and lease losses	**(18,802)**	(9,416)	100
All other assets	**342,343**	321,889	6
Total assets	**$ 2,819,627**	$ 2,434,079	16
Liabilities			
Deposits	**$ 1,795,480**	$ 1,434,803	25
Federal funds purchased and securities loaned or sold under agreements to repurchase	**170,323**	165,109	3
Trading account liabilities	**71,320**	83,270	(14)
Short-term borrowings	**19,321**	24,204	(20)
Long-term debt	**262,934**	240,856	9
All other liabilities	**227,325**	221,027	3
Total liabilities	**2,546,703**	2,169,269	17
Shareholders' equity	**272,924**	264,810	3
Total liabilities and shareholders' equity	**$ 2,819,627**	$ 2,434,079	16

Assets

At December 31, 2020, total assets were approximately $2.8 trillion, up $385.5 billion from December 31, 2019. The increase in assets was primarily due to higher cash held at central banks that was primarily funded by deposit growth and debt securities, partially offset by a decline in loans and leases.

Cash and Cash Equivalents

Cash and cash equivalents increased $218.9 billion driven by deposit 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 $29.5 billion primarily due to deployment of deposit inflows.

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 decreased $31.0 billion due to a decline in inventory 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 take advantage of market conditions that create economically attractive returns on these investments. Debt securities increased $212.7 billion primarily driven by the deployment of deposit inflows. For more information on debt securities, see *Note 4 – Securities* to the Consolidated Financial Statements.

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Loans and Leases

Loans and leases decreased $55.6 billion primarily driven by commercial loan paydowns, lower credit card spending and lower residential mortgages due to higher paydowns and a decline in originations. For more information on the loan portfolio, see Credit Risk Management on page 84.

Allowance for Loan and Lease Losses

The allowance for loan and lease losses increased $9.4 billion primarily due to the weaker economic outlook related to COVID-19 and the impact of the adoption of the new credit loss accounting standard. For more information, see Allowance for Credit Losses on page 99.

Liabilities

At December 31, 2020, total liabilities were approximately $2.5 trillion, up $377.4 billion from December 31, 2019, primarily due to deposit growth.

Deposits

Deposits increased $360.7 billion primarily due to an increase in retail and wholesale deposits.

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 $5.2 billion primarily driven by client activity within *Global Markets*.

Trading Account Liabilities

Trading account liabilities consist primarily of short positions in equity and fixed-income securities including U.S. Treasury and agency securities, corporate securities and non-U.S. sovereign debt. Trading account liabilities decreased $12.0 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 decreased $4.9 billion due to higher deposit levels. For more information on short-term borrowings, see *Note 10 – Federal Funds Sold or Purchased, Securities Financing Agreements, Short-term Borrowings and Restricted Cash* to the Consolidated Financial Statements.

Long-term Debt

Long-term debt increased $22.1 billion primarily due to debt issuances and valuation adjustments, partially offset by maturities and redemptions. For more information on long-term debt, see *Note 11 – Long-term Debt* to the Consolidated Financial Statements.

Shareholders' Equity

Shareholders' equity increased $8.1 billion driven by net income, market value increases on debt securities and issuances of preferred and common stock, partially offset by the return of capital to shareholders totaling $14.7 billion through share repurchases and common and preferred stock dividends, as well as the impact of the adoption of the new credit loss accounting standard and the redemption of preferred stock.

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 and long-term debt. For more information on liquidity, see Liquidity Risk on page 80.

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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 as follows:

- 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 111.

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 196.

Our consolidated key performance indicators, which include various equity and credit metrics, are presented in Table 1 on page 50 and/or Tables 6 and 7 on pages 55 and 56.

For information on key segment performance metrics, see Business Segment Operations on page 59.

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Table 6 Five-year Summary of Selected Financial Data

(In millions, except per share information)	2020	2019	2018	2017	2016
Income statement					
Net interest income	**$ 43,360**	$ 48,891	$ 48,162	$ 45,239	$ 41,486
Noninterest income	**42,168**	42,353	42,858	41,887	42,012
Total revenue, net of interest expense	**85,528**	91,244	91,020	87,126	83,498
Provision for credit losses	**11,320**	3,590	3,282	3,396	3,597
Noninterest expense	**55,213**	54,900	53,154	54,517	54,880
Income before income taxes	**18,995**	32,754	34,584	29,213	25,021
Income tax expense	**1,101**	5,324	6,437	10,981	7,199
Net income	**17,894**	27,430	28,147	18,232	17,822
Net income applicable to common shareholders	**16,473**	25,998	26,696	16,618	16,140
Average common shares issued and outstanding	**8,753.2**	9,390.5	10,096.5	10,195.6	10,248.1
Average diluted common shares issued and outstanding	**8,796.9**	9,442.9	10,236.9	10,778.4	11,046.8
Performance ratios					
Return on average assets [1]	**0.67 %**	1.14 %	1.21 %	0.80 %	0.81 %
Return on average common shareholders' equity [1]	**6.76**	10.62	11.04	6.72	6.69
Return on average tangible common shareholders' equity [2]	**9.48**	14.86	15.55	9.41	9.51
Return on average shareholders' equity [1]	**6.69**	10.24	10.63	6.72	6.70
Return on average tangible shareholders' equity [2]	**9.07**	13.85	14.46	9.08	9.17
Total ending equity to total ending assets	**9.68**	10.88	11.27	11.71	12.17
Total average equity to total average assets	**9.96**	11.14	11.39	11.96	12.14
Dividend payout	**38.18**	23.65	20.31	24.24	15.94
Per common share data					
Earnings	**$ 1.88**	$ 2.77	$ 2.64	$ 1.63	$ 1.57
Diluted earnings	**1.87**	2.75	2.61	1.56	1.49
Dividends paid	**0.72**	0.66	0.54	0.39	0.25
Book value [1]	**28.72**	27.32	25.13	23.80	23.97
Tangible book value [2]	**20.60**	19.41	17.91	16.96	16.89
Market capitalization	**$ 262,206**	$ 311,209	$ 238,251	$ 303,681	$ 222,163
Average balance sheet					
Total loans and leases	**$ 982,467**	$ 958,416	$ 933,049	$ 918,731	$ 900,433
Total assets	**2,683,122**	2,405,830	2,325,246	2,268,633	2,190,218
Total deposits	**1,632,998**	1,380,326	1,314,941	1,269,796	1,222,561
Long-term debt	**220,440**	201,623	200,399	194,882	204,826
Common shareholders' equity	**243,685**	244,853	241,799	247,101	241,187
Total shareholders' equity	**267,309**	267,889	264,748	271,289	265,843
Asset quality [3]					
Allowance for credit losses [4]	**$ 20,680**	$ 10,229	$ 10,398	$ 11,170	$ 11,999
Nonperforming loans, leases and foreclosed properties [5]	**5,116**	3,837	5,244	6,758	8,084
Allowance for loan and lease losses as a percentage of total loans and leases outstanding [5]	**2.04 %**	0.97 %	1.02 %	1.12 %	1.26 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases [5]	**380**	265	194	161	149
Net charge-offs	**$ 4,121**	$ 3,648	$ 3,763	$ 3,979	$ 3,821
Net charge-offs as a percentage of average loans and leases outstanding [5]	**0.42 %**	0.38 %	0.41 %	0.44 %	0.43 %
Capital ratios at year end [6]					
Common equity tier 1 capital	**11.9 %**	11.2 %	11.6 %	11.5 %	10.8 %
Tier 1 capital	**13.5**	12.6	13.2	13.0	12.4
Total capital	**16.1**	14.7	15.1	14.8	14.2
Tier 1 leverage	**7.4**	7.9	8.4	8.6	8.8
Supplementary leverage ratio	**7.2**	6.4	6.8	n/a	n/a
Tangible equity [2]	**7.4**	8.2	8.6	8.9	9.2
Tangible common equity [2]	**6.5**	7.3	7.6	7.9	8.0

[1] For definitions, see Key Metrics on page 196

[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 54 and Non-GAAP Reconciliations on page 111.

[3] Asset quality metrics include $75 million of non-U.S. consumer credit card net charge-offs in 2017 and $243 million of non-U.S. consumer credit card allowance for loan and lease losses, $9.2 billion of non-U.S. consumer credit card loans and $175 million of non-U.S. consumer credit card net charge-offs in 2016. The Corporation sold its non-U.S. consumer credit card business in 2017.

[4] Includes the allowance for loan and leases 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 90 and corresponding Table 28 and Commercial Portfolio Credit Risk Management – Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 94 and corresponding Table 35.

[6] Basel 3 transition provisions for regulatory capital adjustments and deductions were fully phased-in as of January 1, 2018. Prior periods are presented on a fully phased-in basis. For additional information, including which approach is used to assess capital adequacy, see Capital Management on page 73.

n/a = not applicable

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Table 7 Selected Quarterly Financial Data

(In millions, except per share information)	2020 Quarters				2019 Quarters			
	Fourth	Third	Second	First	Fourth	Third	Second	First
Income statement								
Net interest income	$ 10,253	$ 10,129	$ 10,848	$ 12,130	$ 12,140	$ 12,187	$ 12,189	$ 12,375
Noninterest income	9,846	10,207	11,478	10,637	10,209	10,620	10,895	10,629
Total revenue, net of interest expense	20,099	20,336	22,326	22,767	22,349	22,807	23,084	23,004
Provision for credit losses	53	1,389	5,117	4,761	941	779	857	1,013
Noninterest expense	13,927	14,401	13,410	13,475	13,239	15,169	13,268	13,224
Income before income taxes	6,119	4,546	3,799	4,531	8,169	6,859	8,959	8,767
Income tax expense	649	(335)	266	521	1,175	1,082	1,611	1,456
Net income	5,470	4,881	3,533	4,010	6,994	5,777	7,348	7,311
Net income applicable to common shareholders	5,208	4,440	3,284	3,541	6,748	5,272	7,109	6,869
Average common shares issued and outstanding	8,724.9	8,732.9	8,739.9	8,815.6	9,017.1	9,303.6	9,523.2	9,725.9
Average diluted common shares issued and outstanding	8,785.0	8,777.5	8,768.1	8,862.7	9,079.5	9,353.0	9,559.6	9,787.3
Performance ratios								
Return on average assets [1]	0.78 %	0.71 %	0.53 %	0.65 %	1.13 %	0.95 %	1.23 %	1.26 %
Four-quarter trailing return on average assets [2]	0.67	0.75	0.81	0.99	1.14	1.17	1.24	1.22
Return on average common shareholders' equity [1]	8.39	7.24	5.44	5.91	11.00	8.48	11.62	11.42
Return on average tangible common shareholders' equity [3]	11.73	10.16	7.63	8.32	15.43	11.84	16.24	16.01
Return on average shareholders' equity [1]	8.03	7.26	5.34	6.10	10.40	8.48	11.00	11.14
Return on average tangible shareholders' equity [3]	10.84	9.84	7.23	8.29	14.09	11.43	14.88	15.10
Total ending equity to total ending assets	9.68	9.82	9.69	10.11	10.88	11.06	11.33	11.23
Total average equity to total average assets	9.71	9.76	9.85	10.60	10.89	11.21	11.17	11.28
Dividend payout	30.11	35.36	47.87	44.57	23.90	31.48	19.95	21.20
Per common share data								
Earnings	$ 0.60	$ 0.51	$ 0.38	$ 0.40	$ 0.75	$ 0.57	$ 0.75	$ 0.71
Diluted earnings	0.59	0.51	0.37	0.40	0.74	0.56	0.74	0.70
Dividends paid	0.18	0.18	0.18	0.18	0.18	0.18	0.15	0.15
Book value [1]	28.72	28.33	27.96	27.84	27.32	26.96	26.41	25.57
Tangible book value [3]	20.60	20.23	19.90	19.79	19.41	19.26	18.92	18.26
Market capitalization	$ 262,206	$ 208,656	$ 205,772	$ 184,181	$ 311,209	$ 264,842	$ 270,935	$ 263,992
Average balance sheet								
Total loans and leases	$ 934,798	$ 974,018	$1,031,387	$ 990,283	$ 973,986	$ 964,733	$ 950,525	$ 944,020
Total assets	2,791,874	2,739,684	2,704,186	2,494,928	2,450,005	2,412,223	2,399,051	2,360,992
Total deposits	1,737,139	1,695,488	1,658,197	1,439,336	1,410,439	1,375,052	1,375,450	1,359,864
Long-term debt	225,423	224,254	221,167	210,816	206,026	202,620	201,007	196,726
Common shareholders' equity	246,840	243,896	242,889	241,078	243,439	246,630	245,438	243,891
Total shareholders' equity	271,020	267,323	266,316	264,534	266,900	270,430	267,975	266,217
Asset quality								
Allowance for credit losses [4]	$ 20,680	$ 21,506	$ 21,091	$ 17,126	$ 10,229	$ 10,242	$ 10,333	$ 10,379
Nonperforming loans, leases and foreclosed properties [5]	5,116	4,730	4,611	4,331	3,837	3,723	4,452	5,145
Allowance for loan and lease losses as a percentage of total loans and leases outstanding [5]	2.04 %	2.07 %	1.96 %	1.51 %	0.97 %	0.98 %	1.00 %	1.02 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases [5]	380	431	441	389	265	271	228	197
Net charge-offs	$ 881	$ 972	$ 1,146	$ 1,122	$ 959	$ 811	$ 887	$ 991
Annualized net charge-offs as a percentage of average loans and leases outstanding [5]	0.38 %	0.40 %	0.45 %	0.46 %	0.39 %	0.34 %	0.38 %	0.43 %
Capital ratios at period end [6]								
Common equity tier 1 capital	11.9 %	11.9 %	11.4 %	10.8 %	11.2 %	11.4 %	11.7 %	11.6 %
Tier 1 capital	13.5	13.5	12.9	12.3	12.6	12.9	13.3	13.1
Total capital	16.1	16.1	14.8	14.6	14.7	15.1	15.4	15.2
Tier 1 leverage	7.4	7.4	7.4	7.9	7.9	8.2	8.4	8.4
Supplementary leverage ratio	7.2	6.9	7.1	6.4	6.4	6.6	6.8	6.8
Tangible equity [3]	7.4	7.4	7.3	7.7	8.2	8.4	8.7	8.5
Tangible common equity [3]	6.5	6.6	6.5	6.7	7.3	7.4	7.6	7.6
Total loss-absorbing capacity and long-term debt metrics								
Total loss-absorbing capacity to risk-weighted assets	27.4 %	26.9 %	26.0 %	24.6 %	24.6 %	24.8 %	25.5 %	24.8 %
Total loss-absorbing capacity to supplementary leverage exposure	14.5	13.7	14.2	12.8	12.5	12.7	13.0	12.8
Eligible long-term debt to risk-weighted assets	13.3	12.9	12.4	11.6	11.5	11.4	11.8	11.4
Eligible long-term debt to supplementary leverage exposure	7.1	6.6	6.7	6.1	5.8	5.8	6.0	5.9

(1) For definitions, see Key Metrics on page 196.
(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 54 and Non-GAAP Reconciliations on page 111.
(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 91 and corresponding Table 28 and Commercial Portfolio Credit Risk Management – Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 95 and corresponding Table 35.
(6) For more information, including which approach is used to assess capital adequacy, see Capital Management on page 73.

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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
	2020			2019			2018		
Earning assets									
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	$ 253,227	$ 359	0.14 %	$ 125,555	$ 1,823	1.45 %	$ 139,848	$ 1,926	1.38 %
Time deposits placed and other short-term investments	8,840	29	0.33	9,427	207	2.19	9,446	216	2.29
Federal funds sold and securities borrowed or purchased under agreements to resell	309,945	903	0.29	279,610	4,843	1.73	251,328	3,176	1.26
Trading account assets	148,076	4,185	2.83	148,076	5,269	3.56	132,724	4,901	3.69
Debt securities	532,266	9,868	1.87	450,090	11,917	2.65	437,312	11,837	2.66
Loans and leases [2]									
Residential mortgage	236,719	7,338	3.10	220,552	7,651	3.47	207,523	7,294	3.51
Home equity	38,251	1,290	3.37	44,600	2,194	4.92	53,886	2,573	4.77
Credit card	85,017	8,759	10.30	94,488	10,166	10.76	94,612	9,579	10.12
Direct/Indirect and other consumer [3]	89,974	2,545	2.83	90,656	3,261	3.60	93,036	3,104	3.34
Total consumer	449,961	19,932	4.43	450,296	23,272	5.17	449,057	22,550	5.02
U.S. commercial [4]	344,095	9,712	2.82	321,467	13,161	4.09	304,387	11,937	3.92
Non-U.S. commercial [4]	106,487	2,208	2.07	103,918	3,402	3.27	97,664	3,220	3.30
Commercial real estate [5]	63,428	1,790	2.82	62,044	2,741	4.42	60,384	2,618	4.34
Commercial lease financing	18,496	559	3.02	20,691	718	3.47	21,557	698	3.24
Total commercial	532,506	14,269	2.68	508,120	20,022	3.94	483,992	18,473	3.82
Total loans and leases	982,467	34,201	3.48	958,416	43,294	4.52	933,049	41,023	4.40
Other earning assets	83,078	2,539	3.06	69,089	4,478	6.48	76,524	4,300	5.62
Total earning assets	2,317,899	52,084	2.25	2,040,263	71,831	3.52	1,980,231	67,379	3.40
Cash and due from banks	31,885			26,193			25,830		
Other assets, less allowance for loan and lease losses	333,338			339,374			319,185		
Total assets	$ 2,683,122			$ 2,405,830			$ 2,325,246		
Interest-bearing liabilities									
U.S. interest-bearing deposits									
Savings	$ 58,113	$ 6	0.01 %	$ 52,020	$ 5	0.01 %	$ 54,226	$ 6	0.01 %
Demand and money market deposit accounts	829,719	977	0.12	741,126	4,471	0.60	676,382	2,636	0.39
Consumer CDs and IRAs	47,780	405	0.85	47,577	471	0.99	39,823	157	0.39
Negotiable CDs, public funds and other deposits	64,857	323	0.50	66,866	1,407	2.11	50,593	991	1.96
Total U.S. interest-bearing deposits	1,000,469	1,711	0.17	907,589	6,354	0.70	821,024	3,790	0.46
Non-U.S. interest-bearing deposits									
Banks located in non-U.S. countries	1,476	4	0.27	1,936	20	1.04	2,312	39	1.69
Governments and official institutions	184	—	0.01	181	—	0.05	810	—	0.01
Time, savings and other	75,386	228	0.30	69,351	814	1.17	65,097	666	1.02
Total non-U.S. interest-bearing deposits	77,046	232	0.30	71,468	834	1.17	68,219	705	1.03
Total interest-bearing deposits	1,077,515	1,943	0.18	979,057	7,188	0.73	889,243	4,495	0.51
Federal funds purchased, securities loaned or sold under agreements to repurchase, short-term borrowings and other interest-bearing liabilities	293,466	987	0.34	276,432	7,208	2.61	269,748	5,839	2.17
Trading account liabilities	41,386	974	2.35	45,449	1,249	2.75	50,928	1,358	2.67
Long-term debt	220,440	4,321	1.96	201,623	6,700	3.32	200,399	6,915	3.45
Total interest-bearing liabilities	1,632,807	8,225	0.50	1,502,561	22,345	1.49	1,410,318	18,607	1.32
Noninterest-bearing sources									
Noninterest-bearing deposits	555,483			401,269			425,698		
Other liabilities [6]	227,523			234,111			224,482		
Shareholders' equity	267,309			267,889			264,748		
Total liabilities and shareholders' equity	$ 2,683,122			$ 2,405,830			$ 2,325,246		
Net interest spread			1.75 %			2.03 %			2.08 %
Impact of noninterest-bearing sources			0.15			0.40			0.37
Net interest income/yield on earning assets [7]		$ 43,859	1.90 %		$ 49,486	2.43 %		$ 48,772	2.45 %

(1) Includes the impact of interest rate risk management contracts. For more information, see Interest Rate Risk Management for the Banking Book on page 105.
(2) Nonperforming loans are included in the respective average loan balances. Income on these nonperforming loans is generally recognized on a cost recovery basis.
(3) Includes non-U.S. consumer loans of $2.9 billion, $2.9 billion and $2.8 billion for 2020, 2019 and 2018, respectively.
(4) Certain prior-period amounts for 2019 have been reclassified to conform to current-period presentation.
(5) Includes U.S. commercial real estate loans of $59.8 billion, $57.3 billion and $56.4 billion, and non-U.S. commercial real estate loans of $3.6 billion, $4.7 billion and $4.0 billion for 2020, 2019 and 2018, respectively.
(6) Includes $34.3 billion, $35.5 billion and $30.4 billion of structured notes and liabilities for 2020, 2019 and 2018, respectively.
(7) Net interest income includes FTE adjustments of $499 million, $595 million and $610 million for 2020, 2019 and 2018, respectively.

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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 2019 to 2020			From 2018 to 2019		
Increase (decrease) in interest income						
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	$ 1,849	$ (3,313)	$ (1,464)	$ (193)	$ 90	$ (103)
Time deposits placed and other short-term investments	(13)	(165)	(178)	—	(9)	(9)
Federal funds sold and securities borrowed or purchased under agreements to resell	519	(4,459)	(3,940)	347	1,320	1,667
Trading account assets	3	(1,087)	(1,084)	563	(195)	368
Debt securities	2,188	(4,237)	(2,049)	135	(55)	80
Loans and leases						
Residential mortgage	563	(876)	(313)	447	(90)	357
Home equity	(312)	(592)	(904)	(446)	67	(379)
Credit card	(1,018)	(389)	(1,407)	(17)	604	587
Direct/Indirect and other consumer	(22)	(694)	(716)	(76)	233	157
Total consumer			(3,340)			722
U.S. commercial [2]	912	(4,361)	(3,449)	665	559	1,224
Non-U.S. commercial [2]	80	(1,274)	(1,194)	209	(27)	182
Commercial real estate	63	(1,014)	(951)	75	48	123
Commercial lease financing	(76)	(83)	(159)	(28)	48	20
Total commercial			(5,753)			1,549
Total loans and leases			(9,093)			2,271
Other earning assets	905	(2,844)	(1,939)	(417)	595	178
Net increase (decrease) in interest income			$ (19,747)			$ 4,452
Increase (decrease) in interest expense						
U.S. interest-bearing deposits						
Savings	$ 1	$ —	$ 1	$ (1)	$ —	$ (1)
Demand and money market deposit accounts	507	(4,001)	(3,494)	254	1,581	1,835
Consumer CDs and IRAs	2	(68)	(66)	29	285	314
Negotiable CDs, public funds and other deposits	(39)	(1,045)	(1,084)	320	96	416
Total U.S. interest-bearing deposits			(4,643)			2,564
Non-U.S. interest-bearing deposits						
Banks located in non-U.S. countries	(5)	(11)	(16)	(6)	(13)	(19)
Time, savings and other	68	(654)	(586)	41	107	148
Total non-U.S. interest-bearing deposits			(602)			129
Total interest-bearing deposits			(5,245)			2,693
Federal funds purchased, securities loaned or sold under agreements to repurchase, short-term borrowings and other interest-bearing liabilities	451	(6,672)	(6,221)	160	1,209	1,369
Trading account liabilities	(111)	(164)	(275)	(145)	36	(109)
Long-term debt	619	(2,998)	(2,379)	41	(256)	(215)
Net increase (decrease) in interest expense			(14,120)			3,738
Net increase (decrease) in net interest income [3]			$ (5,627)			$ 714

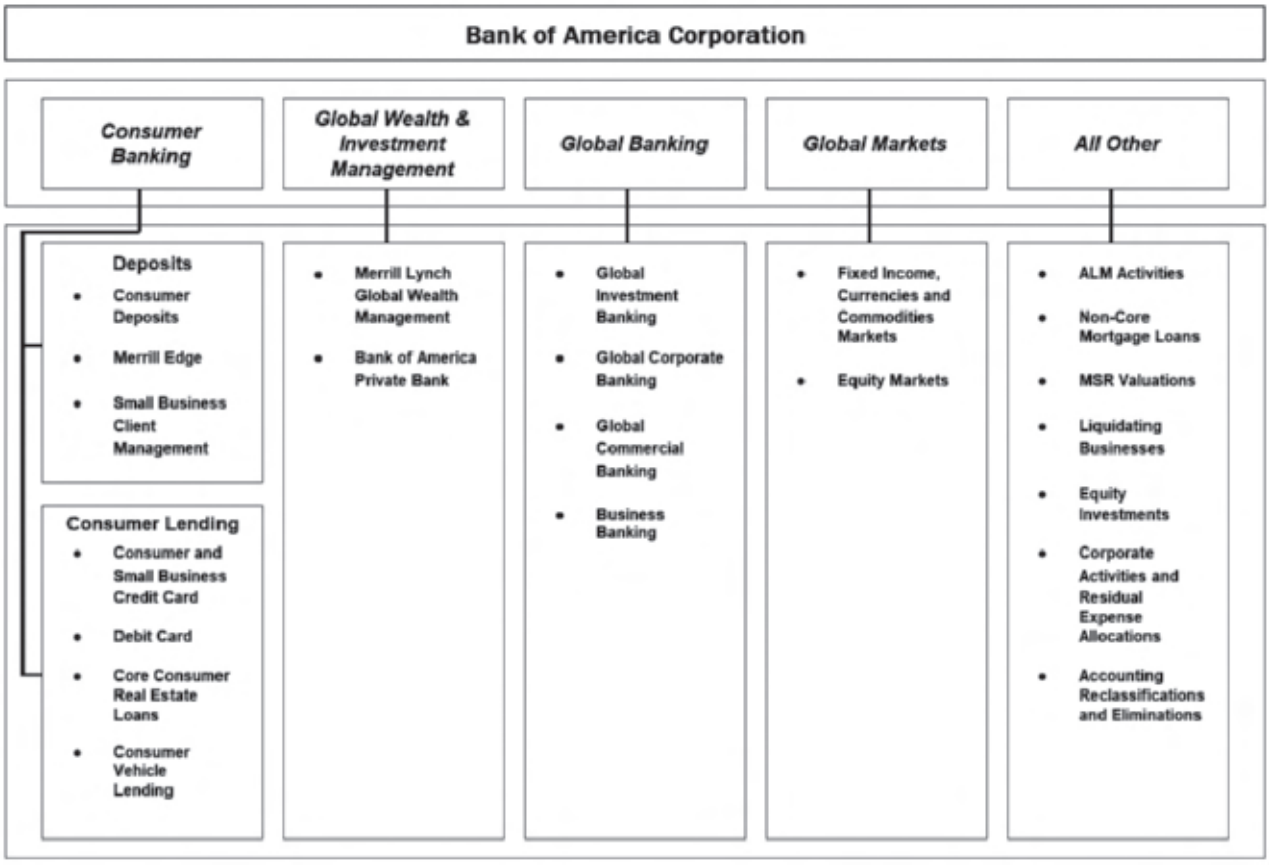
[1] The changes for each category of interest income and expense are divided between the portion of change attributable to the variance in volume and the portion of change attributable to the variance in rate for that category. The unallocated change in rate or volume variance is allocated between the rate and volume variances.
[2] Certain prior-period amounts have been reclassified to conform to current-period presentation.
[3] Includes changes in FTE basis adjustments of a $96 million decrease from 2019 to 2020 and a $15 million decrease from 2018 to 2019.

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Business Segment Operations

Segment Description and Basis of Presentation

We report our results of operations through 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 70. 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 54, and for reconciliations to consolidated total revenue, net income and period-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.

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Consumer Banking

(Dollars in millions)	Deposits 2020	Deposits 2019	Consumer Lending 2020	Consumer Lending 2019	Total Consumer Banking 2020	Total Consumer Banking 2019	% Change
Net interest income	$ 13,739	$ 16,904	$ 10,959	$ 11,254	$ 24,698	$ 28,158	(12)%
Noninterest income:							
Card income	(20)	(33)	4,693	5,117	4,673	5,084	(8)
Service charges	3,416	4,216	1	2	3,417	4,218	(19)
All other income	310	833	164	294	474	1,127	(58)
Total noninterest income	3,706	5,016	4,858	5,413	8,564	10,429	(18)
Total revenue, net of interest expense	17,445	21,920	15,817	16,667	33,262	38,587	(14)
Provision for credit losses	379	269	5,386	3,503	5,765	3,772	53
Noninterest expense	11,508	10,718	7,370	6,928	18,878	17,646	7
Income before income taxes	5,558	10,933	3,061	6,236	8,619	17,169	(50)
Income tax expense	1,362	2,679	750	1,528	2,112	4,207	(50)
Net income	$ 4,196	$ 8,254	$ 2,311	$ 4,708	$ 6,507	$ 12,962	(50)
Effective tax rate [1]					24.5 %	24.5 %	
Net interest yield	1.69 %	2.40 %	3.53 %	3.80 %	2.88	3.81	
Return on average allocated capital	35	69	9	19	17	35	
Efficiency ratio	65.97	48.90	46.60	41.56	56.76	45.73	
Balance Sheet							
Average							
Total loans and leases	$ 5,144	$ 5,371	$ 310,436	$ 295,562	$ 315,580	$ 300,933	5 %
Total earning assets [2]	813,779	703,481	310,862	296,051	858,724	738,807	16
Total assets [2]	849,924	735,298	314,599	306,169	898,606	780,742	15
Total deposits	816,968	702,972	6,698	5,368	823,666	708,340	16
Allocated capital	12,000	12,000	26,500	25,000	38,500	37,000	4
Year end							
Total loans and leases	$ 4,673	$ 5,467	$ 295,261	$ 311,942	$ 299,934	$ 317,409	(6)%
Total earning assets [2]	899,951	724,573	295,627	312,684	945,343	760,174	24
Total assets [2]	939,629	758,459	299,186	322,717	988,580	804,093	23
Total deposits	906,092	725,665	6,560	5,080	912,652	730,745	25

[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*.

Consumer Banking, which is 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. Our network includes approximately 4,300 financial centers, approximately 17,000 ATMS, nationwide call centers and leading digital banking platforms with more than 39 million active users, including approximately 31 million active mobile users.

Consumer Banking Results.

Net income for *Consumer Banking* decreased $6.5 billion to $6.5 billion in 2020 compared to 2019 primarily due to lower revenue, higher provision for credit losses and higher expenses. Net interest income decreased $3.5 billion to $24.7 billion primarily due to lower rates, partially offset by the benefit of higher deposit and loan balances. Noninterest income decreased $1.9 billion to $8.6 billion driven by a decline in service charges primarily due to higher deposit balances and lower card income due to decreased client activity, as well as lower other income due to the allocation of asset and liability management (ALM) results.

The provision for credit losses increased $2.0 billion to $5.8 billion primarily due to the weaker economic outlook related to COVID-19. Noninterest expense increased $1.2 billion to $18.9 billion primarily driven by incremental expense to support customers and employees during the pandemic, as well as the cost of increased client activity and continued investments for business growth, including the merchant services platform.

The return on average allocated capital was 17 percent, down from 35 percent, driven by lower net income and, to a lesser extent, an increase in allocated capital. For information on capital allocated to the business segments, see Business Segment Operations on page 59.

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Deposits

Deposits includes the results of consumer deposit activities which consist of a comprehensive range of products provided to consumers and small businesses. Our deposit products include traditional savings accounts, money market savings accounts, CDs and IRAs, and noninterest- and interest-bearing checking accounts, as well as investment accounts and products. Net interest income is allocated to the 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, non-sufficient funds fees, overdraft charges and ATM fees, as well as investment and brokerage fees from Merrill Edge accounts. Merrill Edge is an integrated investing and banking service targeted at customers with less than $250,000 in investable assets. Merrill Edge provides investment advice and guidance, client brokerage asset services, a self-directed online investing platform and key banking capabilities including access to the Corporation's network of financial centers and ATMs.

Net income for Deposits decreased $4.1 billion to $4.2 billion primarily driven by lower revenue. Net interest income declined $3.2 billion to $13.7 billion primarily due to lower interest rates, partially offset by the benefit of growth in deposits. Noninterest income decreased $1.3 billion to $3.7 billion primarily driven by lower service charges due to higher deposit balances and lower client activity related to the impact of COVID-19, as well as lower other income due to the allocation of ALM results.

The provision for credit losses increased $110 million to $379 million in 2020 due to the weaker economic outlook related to COVID-19. Noninterest expense increased $790 million to $11.5 billion driven by continued investments in the business and incremental expense to support customers and employees during the pandemic.

Average deposits increased $114.0 billion to $817.0 billion in 2020 driven by strong organic growth of $79.3 billion in checking and time deposits and $34.4 billion in traditional savings and money market savings.

The following table 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

	2020	2019
Total deposit spreads (excludes noninterest costs) [1]	**1.94%**	2.34%
Year End		
Consumer investment assets (in millions) [2]	**$306,104**	$240,132
Active digital banking users (units in thousands) [3]	**39,315**	38,266
Active mobile banking users (units in thousands) [4]	**30,783**	29,174
Financial centers	**4,312**	4,300
ATMs	**16,904**	16,788

[1] Includes deposits held in Consumer Lending.
[2] Includes client brokerage assets, deposit sweep balances and AUM in *Consumer Banking*.
[3] Active digital banking users represents mobile and/or online users at period end.
[4] Active mobile banking users represents mobile users at period end.

Consumer investment assets increased $66.0 billion in 2020 driven by market performance and client flows. Active mobile banking users increased approximately two million reflecting continuing changes in our customers' banking preferences. We had a net increase of 12 financial centers as we continued 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 credit and debit 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 credit and debit 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 in the core portfolio, including loans held on the balance sheet of Consumer Lending and loans serviced for others.

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Net income for Consumer Lending was $2.3 billion, a decrease of $2.4 billion, primarily due to higher provision for credit losses. Net interest income declined $295 million to $11.0 billion primarily due to lower interest rates, partially offset by loan growth. Noninterest income decreased $555 million to $4.9 billion primarily driven by lower card income due to lower client activity, as well as lower other income due to the allocation of ALM results.

The provision for credit losses increased $1.9 billion to $5.4 billion primarily due to the weaker economic outlook related to COVID-19. Noninterest expense increased $442 million to $7.4 billion primarily driven by investments in the business and incremental expense to support customers and employees during the pandemic.

Average loans increased $14.9 billion to $310.4 billion primarily driven by an increase in residential mortgages and PPP loans, partially offset by a decline in credit cards.

The following table 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)	2020	2019
Total credit card [1]		
Gross interest yield [2]	**10.27 %**	10.76 %
Risk-adjusted margin [3]	**9.16**	8.28
New accounts (in thousands)	**2,505**	4,320
Purchase volumes	**$ 251,599**	$ 277,852
Debit card purchase volumes	**$ 384,503**	$ 360,672

(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 2020, the total risk-adjusted margin increased 88 bps compared to 2019 driven by a lower mix of customer balances at promotional rates, the lower interest rate environment and lower net credit losses. Total credit card purchase volumes declined $26.3 billion to $251.6 billion. The decline in credit card purchase volumes was driven by the impact of COVID-19. While overall spending improved during the second half of 2020, spending for travel and entertainment remained lower compared to 2019. During 2020, debit card purchase volumes increased $23.8 billion to $384.5 billion, despite COVID-19 impacts. Debit card purchase volumes improved in the second half of 2020 as businesses reopened and spending improved.

Key Statistics – Residential Mortgage Loan Production [1]

(Dollars in millions)	2020	2019
Consumer Banking:		
First mortgage	**$ 43,197**	$ 49,179
Home equity	**6,930**	9,755
Total [2]:		
First mortgage	**$ 69,086**	$ 72,467
Home equity	**8,160**	11,131

(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 in *Consumer Banking* and for the total Corporation decreased $6.0 billion and $3.4 billion in 2020 primarily driven by a decline in nonconforming applications.

Home equity production in *Consumer Banking* and for the total Corporation decreased $2.8 billion and $3.0 billion in 2020 primarily driven by a decline in applications.

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Global Wealth & Investment Management

(Dollars in millions)	2020	2019	% Change
Net interest income	$ 5,468	$ 6,504	(16)%
Noninterest income:			
Investment and brokerage services	12,270	11,870	3
All other income	846	1,164	(27)
Total noninterest income	13,116	13,034	1
Total revenue, net of interest expense	18,584	19,538	(5)
Provision for credit losses	357	82	n/m
Noninterest expense	14,154	13,825	2
Income before income taxes	4,073	5,631	(28)
Income tax expense	998	1,380	(28)
Net income	$ 3,075	$ 4,251	(28)
Effective tax rate	24.5 %	24.5 %	
Net interest yield	1.73	2.33	
Return on average allocated capital	21	29	
Efficiency ratio	76.16	70.76	
Balance Sheet			
Average			
Total loans and leases	$ 183,402	$ 168,910	9 %
Total earning assets	316,008	279,681	13
Total assets	328,384	292,016	12
Total deposits	287,123	256,516	12
Allocated capital	15,000	14,500	3
Year end			
Total loans and leases	$ 188,562	$ 176,600	7 %
Total earning assets	356,873	287,201	24
Total assets	369,736	299,770	23
Total deposits	322,157	263,113	22

n/m = not meaningful

GWIM consists of two primary businesses: Merrill Lynch Global Wealth Management (MLGWM) and Bank of America Private Bank.

MLGWM'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. MLGWM 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 MLGWM'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* decreased $1.2 billion to $3.1 billion primarily due to lower net interest income, higher noninterest expense and higher provision for credit losses.

Net interest income decreased $1.0 billion to $5.5 billion due to the impact of lower interest rates, partially offset by the benefit of strong deposit and loan growth.

Noninterest income, which primarily includes investment and brokerage services income, increased $82 million to $13.1 billion primarily due to higher market valuations and positive AUM flows, largely offset by declines in AUM pricing as well as lower other income due to the allocation of ALM results.

The provision for credit losses increased $275 million to $357 million primarily due to the weaker economic outlook related to COVID-19. Noninterest expense increased $329 million to $14.2 billion primarily driven by higher investments in primary sales professionals and revenue-related incentives.

The return on average allocated capital was 21 percent, down from 29 percent, due to lower net income and, to a lesser extent, a small increase in allocated capital.

Average loans increased $14.5 billion to $183.4 billion primarily driven by residential mortgage and custom lending. Average deposits increased $30.6 billion to $287.1 billion primarily driven by inflows resulting from client responses to market volatility and lower spending.

MLGWM revenue of $15.3 billion decreased five percent primarily driven by the impact of lower interest rates, partially offset by the benefits of higher market valuations and positive AUM flows.

Bank of America Private Bank revenue of $3.3 billion decreased four percent primarily driven by the impact of lower interest rates.

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Key Indicators and Metrics

(Dollars in millions, except as noted)	2020	2019
Revenue by Business		
Merrill Lynch Global Wealth Management	**$ 15,292**	$ 16,112
Bank of America Private Bank	**3,292**	3,426
Total revenue, net of interest expense	**$ 18,584**	$ 19,538
Client Balances by Business, at year end		
Merrill Lynch Global Wealth Management	**$ 2,808,340**	$ 2,558,102
Bank of America Private Bank	**541,464**	489,690
Total client balances	**$ 3,349,804**	$ 3,047,792
Client Balances by Type, at year end		
Assets under management	**$ 1,408,465**	$ 1,275,555
Brokerage and other assets	**1,479,614**	1,372,733
Deposits	**322,157**	263,103
Loans and leases [1]	**191,124**	179,296
Less: Managed deposits in assets under management	**(51,556)**	(42,895)
Total client balances	**$ 3,349,804**	$ 3,047,792
Assets Under Management Rollforward		
Assets under management, beginning of year	**$ 1,275,555**	$ 1,072,234
Net client flows	**19,596**	24,865
Market valuation/other	**113,314**	178,456
Total assets under management, end of year	**$ 1,408,465**	$ 1,275,555
Associates, at year end		
Number of financial advisors	**17,331**	17,458
Total wealth advisors, including financial advisors	**19,373**	19,440
Total primary sales professionals, including financial advisors and wealth advisors	**21,213**	20,586
Merrill Lynch Global Wealth Management Metric		
Financial advisor productivity [2] (in thousands)	**$ 1,126**	$ 1,082
Bank of America Private Bank Metric, at year end		
Primary sales professionals	**1,759**	1,766

[1] Includes margin receivables which are classified in customer and other receivables on the Consolidated Balance Sheet.
[2] For a definition, see Key Metrics on page 196.

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 increased $302.0 billion, or 10 percent, to $3.3 trillion at December 31, 2020 compared to December 31, 2019. The increase in client balances was primarily due to higher market valuations and positive client flows.

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Global Banking

(Dollars in millions)	2020	2019	% Change
Net interest income	$ 9,013	$ 10,675	(16)%
Noninterest income:			
Service charges	3,238	3,015	7
Investment banking fees	4,010	3,137	28
All other income	2,726	3,656	(25)
Total noninterest income	9,974	9,808	2
Total revenue, net of interest expense	18,987	20,483	(7)
Provision for credit losses	4,897	414	n/m
Noninterest expense	9,337	9,011	4
Income before income taxes	4,753	11,058	(57)
Income tax expense	1,283	2,985	(57)
Net income	$ 3,470	$ 8,073	(57)
Effective tax rate	27.0 %	27.0 %	
Net interest yield	1.86	2.75	
Return on average allocated capital	8	20	
Efficiency ratio	49.17	43.99	
Balance Sheet			
Average			
Total loans and leases	$ 382,264	$ 374,304	2 %
Total earning assets	485,688	388,152	25
Total assets	542,302	443,083	22
Total deposits	456,562	362,731	26
Allocated capital	42,500	41,000	4
Year end			
Total loans and leases	$ 339,649	$ 379,268	(10)%
Total earning assets	522,650	407,180	28
Total assets	580,561	464,032	25
Total deposits	493,748	383,180	29

n/m = not meaningful

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 products 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 $4.6 billion to $3.5 billion primarily driven by higher provision for credit losses as well as lower revenue.

Revenue decreased $1.5 billion to $19.0 billion driven by lower net interest income. Net interest income decreased $1.7 billion to $9.0 billion primarily driven by lower interest rates, partially offset by higher loan and deposit balances.

Noninterest income of $10.0 billion increased $166 million driven by higher investment banking fees, partially offset by lower valuation driven adjustments on the fair value loan portfolio, debt securities and leveraged loans, as well as the allocation of ALM results.

The provision for credit losses increased $4.5 billion to $4.9 billion primarily due to the weaker economic outlook related to COVID-19. Noninterest expense increased $326 million primarily due to continued investments in the business, partially offset by lower revenue-related incentives.

The return on average allocated capital was eight percent in 2020 compared to 20 percent in 2019 due to lower net income and, to a lesser extent, an increase in allocated capital. For information on capital allocated to the business segments, see Business Segment Operations on page 59.

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.

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

Global Corporate, Global Commercial and Business Banking

(Dollars in millions)	Global Corporate Banking		Global Commercial Banking		Business Banking		Total	
	2020	2019	**2020**	2019	**2020**	2019	**2020**	2019
Revenue								
Business Lending	**$ 3,552**	$ 3,994	**$ 3,743**	$ 4,132	**$ 261**	$ 363	**$ 7,556**	$ 8,489
Global Transaction Services	**2,986**	3,994	**3,169**	3,499	**893**	1,064	**7,048**	8,557
Total revenue, net of interest expense	**$ 6,538**	$ 7,988	**$ 6,912**	$ 7,631	**$ 1,154**	$ 1,427	**$ 14,604**	$ 17,046
Balance Sheet								
Average								
Total loans and leases	**$ 179,393**	$ 177,713	**$ 182,212**	$ 181,485	**$ 14,410**	$ 15,058	**$ 376,015**	$ 374,256
Total deposits	**216,371**	177,924	**191,813**	144,620	**48,214**	40,196	**456,398**	362,740
Year end								
Total loans and leases	**$ 153,126**	$ 181,409	**$ 164,641**	$ 182,727	**$ 13,242**	$ 15,152	**$ 331,009**	$ 379,288
Total deposits	**233,484**	185,352	**207,597**	157,322	**52,150**	40,504	**493,231**	383,178

Business Lending revenue decreased $933 million in 2020 compared to 2019. The decrease was primarily driven by lower interest rates.

Global Transaction Services revenue decreased $1.5 billion in 2020 compared to 2019 driven by the allocation of ALM results, partially offset by the impact of higher deposit balances.

Average loans and leases were relatively flat in 2020 compared to 2019. Average deposits increased 26 percent primarily due to client responses to market volatility, government stimulus and placement of credit draws.

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 following table presents total Corporation investment banking fees and the portion attributable to *Global Banking*.

Investment Banking Fees

(Dollars in millions)	Global Banking		Total Corporation	
	2020	2019	**2020**	2019
Products				
Advisory	**$ 1,458**	$ 1,336	**$ 1,621**	$ 1,460
Debt issuance	**1,555**	1,348	**3,443**	3,107
Equity issuance	**997**	453	**2,328**	1,259
Gross investment banking fees	**4,010**	3,137	**7,392**	5,826
Self-led deals	**(93)**	(62)	**(212)**	(184)
Total investment banking fees	**$ 3,917**	$ 3,075	**$ 7,180**	$ 5,642

Total Corporation investment banking fees, excluding self-led deals, of $7.2 billion, which are primarily included within *Global Banking* and *Global Markets*, increased 27 percent primarily driven by higher equity issuance fees.

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Global Markets

(Dollars in millions)	2020	2019	% Change
Net interest income	$ 4,646	$ 3,915	19 %
Noninterest income:			
Investment and brokerage services	1,973	1,738	14
Investment banking fees	2,991	2,288	31
Market making and similar activities	8,471	7,065	20
All other income	685	608	13
Total noninterest income	14,120	11,699	21
Total revenue, net of interest expense	18,766	15,614	20
Provision for credit losses	251	(9)	n/m
Noninterest expense	11,422	10,728	6
Income before income taxes	7,093	4,895	45
Income tax expense	1,844	1,395	32
Net income	$ 5,249	$ 3,500	50
Effective tax rate	26.0 %	28.5 %	
Return on average allocated capital	15	10	
Efficiency ratio	60.86	68.71	
Balance Sheet			
Average			
Trading-related assets:			
Trading account securities	$ 243,519	$ 246,336	(1)%
Reverse repurchases	104,697	116,883	(10)
Securities borrowed	87,125	83,216	5
Derivative assets	47,655	43,273	10
Total trading-related assets	482,996	489,708	(1)
Total loans and leases	73,062	71,334	2
Total earning assets	482,171	476,225	1
Total assets	685,047	679,300	1
Total deposits	47,400	31,380	51
Allocated capital	36,000	35,000	3
Year end			
Total trading-related assets	$ 421,698	$ 452,499	(7)%
Total loans and leases	78,415	72,993	7
Total earning assets	447,350	471,701	(5)
Total assets	616,609	641,809	(4)
Total deposits	53,925	34,676	56

n/m = not meaningful

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 66.

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 54.

Net income for *Global Markets* increased $1.7 billion to $5.2 billion. Net DVA losses were $133 million compared to losses of $222 million in 2019. Excluding net DVA, net income increased $1.7 billion to $5.4 billion. These increases were primarily driven by higher revenue, partially offset by higher noninterest expense and provision for credit losses.

Revenue increased $3.2 billion to $18.8 billion primarily driven by higher sales and trading revenue and investment banking fees. Sales and trading revenue increased $2.3 billion, and excluding net DVA, increased $2.2 billion. These increases were driven by higher revenue across FICC and Equities.

The provision for credit losses increased $260 million primarily due to the weaker economic outlook related to COVID-19. Noninterest expense increased $694 million to

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$11.4 billion driven by higher activity-based expenses for both card and trading.

Average total assets increased $5.7 billion to $685.0 billion driven by higher client balances in Global Equities. Year-end total assets decreased $25.2 billion to $616.6 billion driven by lower levels of inventory in FICC and increased hedging of client activity in Equities with derivative transactions relative to stock positions.

The return on average allocated capital was 15 percent, up from 10 percent, reflecting higher net income, partially offset by an increase in allocated capital.

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 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 54.

Sales and Trading Revenue [1, 2, 3]

(Dollars in millions)	2020	2019
Sales and trading revenue		
Fixed income, currencies and commodities	**$ 9,595**	$ 8,189
Equities	**5,422**	4,493
Total sales and trading revenue	**$ 15,017**	$ 12,682
Sales and trading revenue, excluding net DVA [4]		
Fixed income, currencies and commodities	**$ 9,725**	$ 8,397
Equities	**5,425**	4,507
Total sales and trading revenue, excluding net DVA	**$ 15,150**	$ 12,904

(1) For more information on sales and trading revenue, see *Note 3 – Derivatives* to the Consolidated Financial Statements.
(2) Includes FTE adjustments of $196 million and $187 million for 2020 and 2019.
(3) Includes *Global Banking* sales and trading revenue of $478 million and $538 million for 2020 and 2019.
(4) FICC and Equities sales and trading revenue, excluding net DVA, is a non-GAAP financial measure. FICC net DVA losses were $130 million and $208 million for 2020 and 2019. Equities net DVA losses were $3 million and $14 million for 2020 and 2019.

FICC revenue increased $1.3 billion driven by increased client activity and improved market-making conditions across macro products. Equities revenue increased $918 million driven by increased client activity and a strong trading performance in a more volatile market environment.

All Other

(Dollars in millions)	2020	2019	% Change
Net interest income	**$ 34**	$ 234	(85)%
Noninterest income (loss)	**(3,606)**	(2,617)	38
Total revenue, net of interest expense	**(3,572)**	(2,383)	50
Provision for credit losses	**50**	(669)	(107)
Noninterest expense	**1,422**	3,690	(61)
Loss before income taxes	**(5,044)**	(5,404)	(7)
Income tax benefit	**(4,637)**	(4,048)	15
Net loss	**$ (407)**	$ (1,356)	(70)
Balance Sheet			
Average			
Total loans and leases	**$ 28,159**	$ 42,935	(34)%
Total assets [1]	**228,783**	210,689	9
Total deposits	**18,247**	21,359	(15)
Year end			
Total loans and leases	**$ 21,301**	$ 37,156	(43)%
Total assets [1]	**264,141**	224,375	18
Total deposits	**12,998**	23,089	(44)

(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 $763.1 billion and $544.3 billion for 2020 and 2019, and year-end allocated assets were $977.7 billion and $565.4 billion at December 31, 2020 and 2019.

All Other consists of ALM activities, equity investments, non-core mortgage loans and servicing activities, liquidating businesses and certain expenses not otherwise allocated to a business segment. ALM activities encompass certain residential mortgages, debt securities, and interest rate and foreign currency risk management activities. Substantially all of the results of ALM activities are allocated to our business segments. For more information on our ALM activities, see *Note 23 – Business Segment Information* to the Consolidated Financial Statements.

Residential mortgage loans that are held for ALM purposes, including interest rate or liquidity risk management, are classified as core and are presented on the balance sheet of *All Other*. During 2020, residential mortgage loans held for ALM activities decreased $12.7 billion to $9.0 billion due primarily to loan sales. Non-core residential mortgage and home equity loans, which are principally runoff portfolios, are also held in *All*

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Other. During 2020, total non-core loans decreased $3.0 billion to $12.6 billion due primarily to payoffs and paydowns, as well as Federal Housing Administration (FHA) loan conveyances and sales, partially offset by repurchases. For more information on the composition of the core and non-core portfolios, see Consumer Portfolio Credit Risk Management on page 85.

The net loss for *All Other* decreased $949 million to a net loss of $407 million, primarily due to a $2.1 billion pretax impairment charge related to the notice of termination of the merchant services joint venture in 2019, partially offset by lower revenue and higher provision for credit losses.

Revenue decreased $1.2 billion primarily due to extinguishment losses on certain structured liabilities, higher client-driven ESG investment activity, resulting in higher partnership losses on these tax-advantaged investments, and lower net interest income, partially offset by a gain on sales of mortgage loans.

The provision for credit losses increased $719 million to $50 million from a provision benefit of $669 million in 2019, primarily due to recoveries from sales of previously charged-off non-core consumer real estate loans in 2019, as well as the weaker economic outlook related to COVID-19.

Noninterest expense decreased $2.3 billion to $1.4 billion primarily due to the $2.1 billion pretax impairment charge in 2019, partially offset by higher litigation expense.

The income tax benefit increased $589 million primarily driven by the impact of the U.K. tax law change and a higher level of income tax credits related to our ESG investment activity, partially offset by the positive impact from the resolution of various tax controversy matters in 2019. Both years included income tax benefit adjustments to eliminate the FTE treatment of certain tax credits recorded in *Global Banking*.

Off-Balance Sheet Arrangements and Contractual Obligations

We have contractual obligations to make future payments on debt and lease agreements. Additionally, in the normal course of business, we enter into contractual arrangements whereby we commit to future purchases of products or services from unaffiliated parties. Purchase obligations are defined as obligations that are legally binding agreements whereby we agree to purchase products or services with a specific minimum quantity at a fixed, minimum or variable price over a specified period of time. Included in purchase obligations are vendor contracts, the most significant of which include communication services, processing services and software contracts. Debt, lease and other obligations are more fully discussed in *Note 11 – Long-term Debt* and *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

Other long-term liabilities include our contractual funding obligations related to the Non-U.S. Pension Plans and Nonqualified and Other Pension Plans (together, the Plans). Obligations to the Plans are based on the current and projected obligations of the Plans, performance of the Plans' assets, and any participant contributions, if applicable. During 2020 and 2019, we contributed $115 million and $135 million to the Plans, and we expect to make $136 million of contributions during 2021. The Plans are more fully discussed in *Note 17 – Employee Benefit Plans* to the Consolidated Financial Statements.

We enter into commitments to extend credit such as loan commitments, standby letters of credit (SBLCs) and commercial letters of credit to meet the financing needs of our customers. For a summary of the total unfunded, or off-balance sheet, credit extension commitment amounts by expiration date, see Credit Extension Commitments in *Note 12 – Commitments and Contingencies* to the Consolidated Financial Statements.

We also utilize variable interest entities (VIEs) in the ordinary course of business to support our financing and investing needs as well as those of our customers. For more information on our involvement with unconsolidated VIEs, see *Note 6 – Securitizations and Other Variable Interest Entities* to the Consolidated Financial Statements.

Table 10 includes certain contractual obligations at December 31, 2020 and 2019.

Table 10 Contractual Obligations

	December 31, 2020					December 31 2019
(Dollars in millions)	Due in One Year or Less	Due After One Year Through Three Years	Due After Three Years Through Five Years	Due After Five Years	Total	Total
Long-term debt	$ 20,352	$ 50,824	$ 48,568	$ 143,190	**$ 262,934**	$ 240,856
Operating lease obligations	1,927	3,169	2,395	4,609	**12,100**	11,794
Purchase obligations	551	700	80	103	**1,434**	3,530
Time deposits	50,661	3,206	426	1,563	**55,856**	74,673
Other long-term liabilities	1,656	1,092	953	781	**4,482**	4,099
Estimated interest expense on long-term debt and time deposits [1]	4,542	8,123	6,958	30,924	**50,547**	44,385
Total contractual obligations	$ 79,689	$ 67,114	$ 59,380	$ 181,170	**$ 387,353**	$ 379,337

[1] Represents forecasted net interest expense on long-term debt and time deposits based on interest rates at December 31, 2020 and 2019. Forecasts are based on the contractual maturity dates of each liability, and are net of derivative hedges, where applicable.

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.

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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, risks 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 may 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 processes, people and systems, or from external events.
- Reputational risk is the risk that negative perceptions of the Corporation's conduct or business practices may adversely impact its 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 fulfilling our purpose and our values and delivering 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 promotes sound risk-taking within our risk appetite. Sustaining a culture of managing risk well throughout the organization is critical to our success 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 clear roles, responsibilities and accountability 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 59.

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 and comparable set of measures for senior management and the Board to clearly indicate our aggregate level of risk and to monitor whether the Corporation's risk profile remains in alignment with our strategic and capital plans. Our risk appetite is formally articulated in the Risk Appetite Statement, which includes both qualitative components 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, including during periods of stress.

Our lines of business operate with risk limits (which may include credit, market and/or operational limits, as applicable) that align with the Corporation's risk appetite. Executive management is responsible for tracking and reporting performance measurements as well as any exceptions to guidelines or 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 73 through 108.

For more information about the Corporation's risks related to the pandemic, see Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K. These COVID-19 related risks are being managed within our Risk Framework and supporting risk management programs.

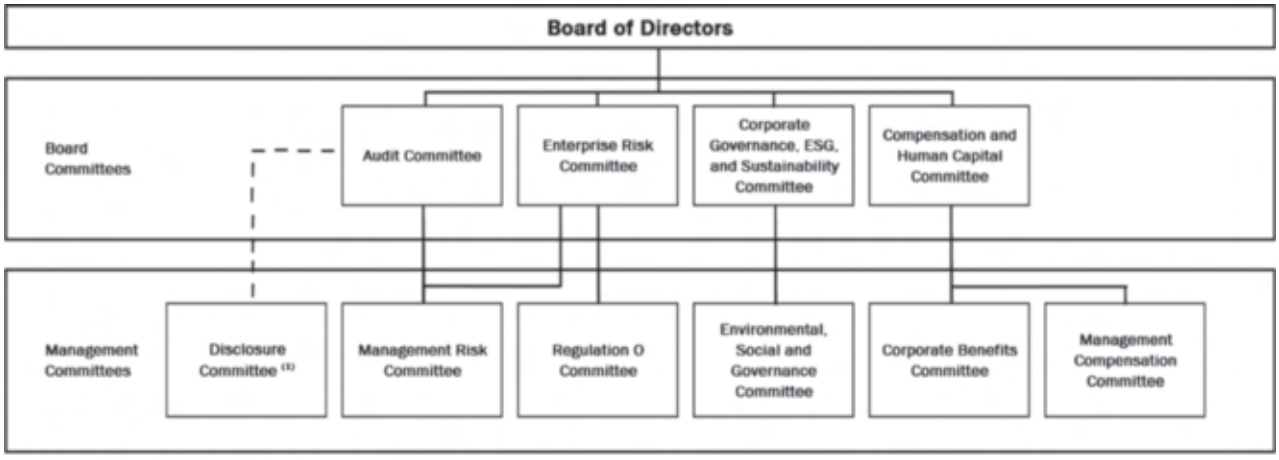
Risk Management Governance

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, for example, committee charters, job descriptions, meeting minutes and resolutions.

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

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The chart below illustrates the inter-relationship 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 17 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 management on risk-related matters to assess scope or resource limitations that could impede the ability of Independent Risk Management (IRM) 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 executive 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 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 risk pursuant to the New York Stock Exchange listing standards.

Enterprise Risk Committee

The ERC has primary responsibility for oversight of the Risk Framework and key risks we face and of the Corporation's overall risk appetite. It approves the Risk Framework and the Risk Appetite Statement and further recommends these documents to the Board for approval. The ERC oversees senior management's responsibilities for the identification, measurement, monitoring and control of key risks we face. 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, recommends nominees for election to our Board, recommends committee appointments for Board approval and reviews our Environmental, Social and Governance and stockholder engagement activities.

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 all of our executive officers' compensation, as well as compensation for non-management directors; and reviewing certain other human capital management topics.

Management Committees

Management committees may receive their authority from the Board, a Board committee, another management committee or from one or more executive officers. Our primary management level risk committee is the Management Risk Committee (MRC). Subject to Board oversight, the MRC is responsible for management oversight of key risks facing the Corporation. This includes providing management oversight of our compliance and operational risk programs, balance sheet and capital management, funding activities and other liquidity activities, stress testing, trading activities, recovery and resolution planning, model risk, subsidiary governance and activities between member banks and their nonbank affiliates pursuant to Federal Reserve rules and regulations, among other things.

Lines of Defense

We have clear ownership and accountability across three lines of defense: Front Line Units (FLUs), IRM and Corporate Audit. We also have control functions outside of FLUs and IRM (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.

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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 Statement and applicable strategic, capital and financial operating plans, as well as applicable policies, standards, procedures and processes. 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 the Global Technology and Operations Group, 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 IRM are first, the Chief Financial Officer (CFO) Group; second, Environmental, Social and Governance (ESG), Capital Deployment (CD) and Public Policy (PP); and third, the Chief Administrative Officer (CAO) Group.

Independent Risk Management

IRM is part of our control functions and includes Global Risk Management. We have other control functions that are not part of IRM (other control functions may also provide oversight to FLU activities), including Legal, Global Human Resources and certain activities within the CFO Group; ESG, CD and PP; and CAO Group. IRM, led by the Chief Risk Officer (CRO), is responsible for independently assessing and overseeing risks within FLUs and other control functions. IRM establishes written enterprise policies and procedures that include concentration risk limits, where appropriate. Such policies and procedures outline how aggregate risks are identified, measured, monitored and controlled.

The CRO has the stature, authority and independence to develop and implement a meaningful risk management framework. The CRO has unrestricted access to the Board and reports directly to both the ERC and to the CEO. Global Risk Management is organized into horizontal risk teams that cover a specific risk area and vertical CRO teams that cover a particular front line unit 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, IRM and other control functions by reporting directly to the Audit Committee or the Board. 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 periodically tests and examines credit portfolios and processes.

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, with a goal of ensuring risks are appropriately considered, evaluated and responded to in a timely manner. We employ our 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 clearly defined and proactively identified. 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, incorporating input from FLUs and control functions, designed to be forward looking and 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 risk quantification process including quantitative and qualitative components. Risk is measured at various levels including, but not limited to, risk type, FLU, legal entity and on an aggregate basis. This risk quantification 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, standards, procedures and processes. We also regularly update risk assessments and review risk exposures. Through our monitoring, we can determine our level of risk relative to limits and can take action in a timely manner. We also can determine when risk limits are breached and have processes to appropriately report and escalate exceptions. This includes 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 that define the responsibilities and authority for risk-taking. The limits and controls can be adjusted by the Board or management when conditions or risk tolerances warrant. These limits may be absolute (e.g., loan amount, trading volume) or relative (e.g., percentage of loan book in higher-risk categories). Our lines of business are held accountable to perform 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 our responsible growth strategy is also critical to effective risk management. We understand that improper actions, behaviors or practices that are illegal, unethical or contrary to our core values could result in harm to the Corporation, our shareholders or our customers, damage the integrity of the financial markets, or negatively impact our reputation, and have established protocols and structures so that such conduct risk is governed and reported across the Corporation. Specifically, our Code of Conduct provides a framework for all of our employees to conduct themselves with the highest integrity. Additionally, we continue to strengthen the link between the employee performance management process and individual compensation to encourage employees to work toward enterprise-wide risk goals.

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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 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, or 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. Our strategic plan is consistent with our risk appetite, capital plan and liquidity requirements and specifically addresses strategic risks.

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, executive 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 59.

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 CCAR capital plan.

Based on the results of our 2020 CCAR supervisory stress test that was submitted to the Federal Reserve in the second quarter of 2020, we are subject to a 2.5 percent stress capital buffer (SCB) for the period beginning October 1, 2020 and ending on September 30, 2021. Our Common equity tier 1 (CET1) capital ratio under the Standardized approach must remain above 9.5 percent during this period (the sum of our CET1 capital ratio minimum of 4.5 percent, global systemically important bank (G-SIB) surcharge of 2.5 percent and our SCB of 2.5 percent) in order to avoid restrictions on capital distributions and discretionary bonus payments.

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Due to economic uncertainty resulting from the pandemic, the Federal Reserve required all large banks to update and resubmit their capital plans in November 2020 based on the Federal Reserve's updated supervisory stress test scenarios. The results of the additional supervisory stress tests were published in December 2020.

The Federal Reserve also required large banks to suspend share repurchase programs during the second half of 2020, except for repurchases to offset shares awarded under equity-based compensation plans, and to limit common stock dividends to existing rates that did not exceed the average of the last four quarters' net income. The Federal Reserve's directives regarding share repurchases aligned with our decision to voluntarily suspend our general common stock repurchase program during the first half of 2020. The suspension of our repurchases did not include repurchases to offset shares awarded under our equity-based compensation plans. Pursuant to the Board's authorization, we repurchased $7.0 billion of common stock during 2020.

In December 2020, the Federal Reserve announced that beginning in the first quarter of 2021, large banks would be permitted to pay common stock dividends at existing rates and to repurchase shares in an amount that, when combined with dividends paid, does not exceed the average of net income over the last four quarters.

On January 19, 2021, we announced that the Board declared a quarterly common stock dividend of $0.18 per share, payable on March 26, 2021 to shareholders of record as of March 5, 2021. We also announced that the Board authorized the repurchase of $2.9 billion in common stock through March 31, 2021, plus repurchases to offset shares awarded under equity-based compensation plans during the same period, estimated to be approximately $300 million. This authorization equals the maximum amount allowed by the Federal Reserve for the period.

Our stock repurchase program is subject to various factors, including the Corporation's capital position, liquidity, financial performance and alternative uses of capital, stock trading price 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 approach that yields the lower ratio is used to assess capital adequacy including under the PCA framework. As of December 31, 2020, the CET1, Tier 1 capital and Total capital ratios for the Corporation were lower under the Standardized approach.

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 greater than 2.5 percent, plus any applicable countercyclical capital buffer and a G-SIB surcharge. On October 1, 2020, the capital conservation buffer was replaced by the SCB for the Corporation's Standardized approach ratio requirements. The buffers and surcharge must be comprised solely of CET1 capital.

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. For more information, see Capital Management – Regulatory Developments on page 78.

Capital Composition and Ratios

Table 11 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, 2020 and 2019. For the periods presented herein, the Corporation met the definition of well capitalized under current regulatory requirements.

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Table 11 Bank of America Corporation Regulatory Capital under Basel 3

(Dollars in millions, except as noted)	Standardized Approach [1, 2]	Advanced Approaches [1]	Regulatory Minimum [3]
	December 31, 2020		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 176,660	$ 176,660	
Tier 1 capital	200,096	200,096	
Total capital [4]	237,936	227,685	
Risk-weighted assets (in billions)	1,480	1,371	
Common equity tier 1 capital ratio	11.9 %	12.9 %	9.5 %
Tier 1 capital ratio	13.5	14.6	11.0
Total capital ratio	16.1	16.6	13.0
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [5]	$ 2,719	$ 2,719	
Tier 1 leverage ratio	7.4 %	7.4 %	4.0
Supplementary leverage exposure (in billions) [6]		$ 2,786	
Supplementary leverage ratio		7.2 %	5.0
	December 31, 2019		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 166,760	$ 166,760	
Tier 1 capital	188,492	188,492	
Total capital [4]	221,230	213,098	
Risk-weighted assets (in billions)	1,493	1,447	
Common equity tier 1 capital ratio	11.2 %	11.5 %	9.5 %
Tier 1 capital ratio	12.6	13.0	11.0
Total capital ratio	14.8	14.7	13.0
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [5]	$ 2,374	$ 2,374	
Tier 1 leverage ratio	7.9 %	7.9 %	4.0
Supplementary leverage exposure (in billions)		$ 2,946	
Supplementary leverage ratio		6.4 %	5.0

[1] As of December 31, 2020, capital ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of CECL.
[2] Derivative exposure amounts are calculated using the standardized approach for measuring counterparty credit risk at December 31, 2020 and the current exposure method at December 31, 2019.
[3] The capital conservation buffer and G-SIB surcharge were 2.5 percent at both December 31, 2020 and 2019. At December 31, 2020, the Corporation's SCB of 2.5 percent was applied in place of the capital conservation buffer under the Standardized approach. The countercyclical capital buffer for both periods was zero. The SLR minimum includes a leverage buffer of 2.0 percent.
[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.
[6] Supplementary leverage exposure at December 31, 2020 reflects the temporary exclusion of U.S. Treasury securities and deposits at Federal Reserve Banks.

At December 31, 2020, CET1 capital was $176.7 billion, an increase of $9.9 billion from December 31, 2019, driven by earnings and net unrealized gains on available-for-sale (AFS) debt securities included in accumulated other comprehensive income (OCI), partially offset by common stock repurchases and dividends. Total capital under the Standardized approach increased $16.7 billion primarily driven by the same factors as CET1 capital, an increase in the adjusted allowance for credit losses included in Tier 2 capital and the issuance of preferred stock. RWA under the Standardized approach, which yielded the lower CET1 capital ratio at December 31, 2020, decreased $13.7 billion during 2020 to $1,480 billion primarily due to lower commercial and consumer lending exposures, partially offset by investments of excess deposits in securities. Table 12 shows the capital composition at December 31, 2020 and 2019.

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Table 12 Capital Composition under Basel 3

(Dollars in millions)	December 31 2020	2019
Total common shareholders' equity	**$ 248,414**	$ 241,409
CECL transitional amount [1]	**4,213**	—
Goodwill, net of related deferred tax liabilities	**(68,565)**	(68,570)
Deferred tax assets arising from net operating loss and tax credit carryforwards	**(5,773)**	(5,193)
Intangibles, other than mortgage servicing rights, net of related deferred tax liabilities	**(1,617)**	(1,328)
Defined benefit pension plan net assets	**(1,164)**	(1,003)
Cumulative unrealized net (gain) loss related to changes in fair value of financial liabilities attributable to own creditworthiness, net-of-tax	**1,753**	1,278
Other	**(601)**	167
Common equity tier 1 capital	**176,660**	166,760
Qualifying preferred stock, net of issuance cost	**23,437**	22,329
Other	**(1)**	(597)
Tier 1 capital	**200,096**	188,492
Tier 2 capital instruments	**22,213**	22,538
Qualifying allowance for credit losses [2]	**15,649**	10,229
Other	**(22)**	(29)
Total capital under the Standardized approach	**237,936**	221,230
Adjustment in qualifying allowance for credit losses under the Advanced approaches [2]	**(10,251)**	(8,132)
Total capital under the Advanced approaches	**$ 227,685**	$ 213,098

[1] The CECL transitional amount includes the impact of the Corporation's adoption of the new CECL accounting standard on January 1, 2020 plus 25 percent of the increase in the adjusted allowance for credit losses from January 1, 2020 through December 31, 2020.
[2] The balance at December 31, 2020 includes the impact of transition provisions related to the new CECL accounting standard.

Table 13 shows the components of RWA as measured under Basel 3 at December 31, 2020 and 2019.

Table 13 Risk-weighted Assets under Basel 3

(Dollars in billions)	Standardized Approach [1] 2020	Advanced Approaches 2020	Standardized Approach [1] 2019	Advanced Approaches 2019
			December 31	
Credit risk	**$ 1,420**	**$ 896**	$ 1,437	$ 858
Market risk	**60**	**60**	56	55
Operational risk [2]	**n/a**	**372**	n/a	500
Risks related to credit valuation adjustments	**n/a**	**43**	n/a	34
Total risk-weighted assets	**$ 1,480**	**$ 1,371**	$ 1,493	$ 1,447

[1] Derivative exposure amounts are calculated using the standardized approach for measuring counterparty credit risk at December 31, 2020 and the current exposure method at December 31, 2019.
[2] December 31, 2020 includes the effects of an update made to our operational risk RWA model during the third quarter of 2020.
n/a = not applicable

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Bank of America, N.A. Regulatory Capital

Table 14 presents regulatory capital information for BANA in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2020 and 2019. BANA met the definition of well capitalized under the PCA framework for both periods.

Table 14 Bank of America, N.A. Regulatory Capital under Basel 3

(Dollars in millions, except as noted)	Standardized Approach [1, 2]	Advanced Approaches [1]	Regulatory Minimum [3]
	December 31, 2020		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 164,593	$ 164,593	
Tier 1 capital	164,593	164,593	
Total capital [4]	181,370	170,922	
Risk-weighted assets (in billions)	1,221	1,014	
Common equity tier 1 capital ratio	13.5 %	16.2 %	7.0 %
Tier 1 capital ratio	13.5	16.2	8.5
Total capital ratio	14.9	16.9	10.5
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [5]	$ 2,143	$ 2,143	
Tier 1 leverage ratio	7.7 %	7.7 %	5.0
Supplementary leverage exposure (in billions)		$ 2,525	
Supplementary leverage ratio		6.5 %	6.0
	December 31, 2019		
Risk-based capital metrics:			
Common equity tier 1 capital	$ 154,626	$ 154,626	
Tier 1 capital	154,626	154,626	
Total capital [4]	166,567	158,665	
Risk-weighted assets (in billions)	1,241	991	
Common equity tier 1 capital ratio	12.5 %	15.6 %	7.0 %
Tier 1 capital ratio	12.5	15.6	8.5
Total capital ratio	13.4	16.0	10.5
Leverage-based metrics:			
Adjusted quarterly average assets (in billions) [5]	$ 1,780	$ 1,780	
Tier 1 leverage ratio	8.7 %	8.7 %	5.0
Supplementary leverage exposure (in billions)		$ 2,177	
Supplementary leverage ratio		7.1 %	6.0

[1] As of December 31, 2020, capital ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of CECL.
[2] Derivative exposure amounts are calculated using the standardized approach for measuring counterparty credit risk at December 31, 2020 and the current exposure method at December 31, 2019.
[3] Risk-based capital regulatory minimums at both December 31, 2020 and 2019 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.

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 15 presents the Corporation's TLAC and long-term debt ratios and related information as of December 31, 2020 and 2019.

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Table 15 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, 2020			
Total eligible balance	$ 405,153		$ 196,997	
Percentage of risk-weighted assets [4]	27.4 %	22.0 %	13.3 %	8.5 %
Percentage of supplementary leverage exposure [5, 6]	14.5	9.5	7.1	4.5
	December 31, 2019			
Total eligible balance	$ 367,449		$ 171,349	
Percentage of risk-weighted assets [4]	24.6 %	22.0 %	11.5 %	8.5 %
Percentage of supplementary leverage exposure [6]	12.5	9.5	5.8	4.5

(1) As of December 31, 2020, 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 both December 31, 2020 and 2019.
(5) Supplementary leverage exposure at December 31, 2020 reflects the temporary exclusion of U.S. Treasury Securities and deposits at Federal Reserve Banks.
(6) Derivative exposure amounts are calculated using the standardized approach for measuring counterparty credit risk at December 31, 2020 and the current exposure method at December 31, 2019.

Regulatory Developments

Revisions to Basel 3 to Address Current Expected Credit Loss Accounting

On January 1, 2020, the Corporation adopted the new accounting standard that requires the measurement of the allowance for credit losses to be based on management's best estimate of lifetime ECL inherent in the Corporation's relevant financial assets. For more information, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements. During the first quarter of 2020, in accordance with an interim final rule issued by U.S. banking regulators that was finalized on August 26, 2020, the Corporation delayed for two years the initial adoption impact of CECL on regulatory capital, followed by a three-year transition period to phase out the aggregate amount of the capital benefit provided during 2020 and 2021 (i.e., a five-year transition period). During the two-year delay, the Corporation will add back to CET1 capital 100 percent of the initial adoption impact of CECL plus 25 percent of the cumulative quarterly changes in the allowance for credit losses (i.e., quarterly transitional amounts). After two years, starting on January 1, 2022, the quarterly transitional amounts along with the initial adoption impact of CECL will be phased out of CET1 capital over the three-year period.

Stress Capital Buffer

On March 4, 2020, the Federal Reserve issued a final rule that integrates the annual quantitative assessment of the CCAR program with the buffer requirements in the U.S. Basel 3 Final Rule. The new approach replaced the static 2.5 percent capital conservation buffer for Basel 3 Standardized approach requirements with a SCB, calculated as the decline in the CET1 capital ratio under the supervisory severely adverse scenario plus four quarters of planned common stock dividends, floored at 2.5 percent. Based on the CCAR 2020 supervisory stress test results, the Corporation is subject to a 2.5 percent SCB for the period beginning October 1, 2020 and ending on September 30, 2021.

In conjunction with this new requirement, the Federal Reserve has removed the annual CCAR quantitative objection process beginning with CCAR 2020. While the final rule continues to require that the Corporation describe its planned capital distributions in its CCAR capital plan, the Corporation is no longer required to seek prior approval if it makes capital distributions in excess of those included in its CCAR capital plan. The Corporation is instead subject to automatic distribution limitations if its capital ratios fall below its buffer requirements, which include the SCB.

Eligible Retained Income

On March 17, 2020, in response to the economic impact of the pandemic, the U.S. banking regulators issued an interim final rule that revises the definition of eligible retained income to be based on average net income over the prior four quarters. This change, which was finalized on August 26, 2020, more gradually phases in automatic distribution restrictions to the extent capital buffers are breached.

Supplementary Leverage Ratio

On April 1, 2020, in response to the economic impact of the pandemic, the Federal Reserve issued an interim final rule to temporarily exclude the on-balance sheet amounts of U.S. Treasury securities and deposits at Federal Reserve Banks from the calculation of supplementary leverage exposure for bank holding companies. The rule is effective for June 30, 2020 through March 31, 2021 reports. As of December 31, 2020, temporary exclusions improved the SLR by 1.0 percent to 7.2 percent.

On May 15, 2020, the U.S. banking regulators issued an interim final rule that provides a similar temporary exclusion to depository institutions, effective from the beginning of the second quarter of 2020 through March 31, 2021; however, institutions must elect the relief. Beginning in the third quarter of 2020, a depository institution electing to apply the exclusion must receive approval from its primary regulator prior to making any capital distributions as long as the exclusion is in effect. As of December 31, 2020, the Corporation's insured depository institution subsidiaries have not elected the exclusion.

Paycheck Protection Program Loans

On April 9, 2020, in response to the economic impact of the pandemic, the U.S. banking regulators issued an interim final rule that, among other things, stipulates PPP loans, which are guaranteed by the SBA, will receive a zero percent risk weight under the Basel 3 Advanced and Standardized approaches. The rule was later finalized by the U.S. banking regulators on October 28, 2020. For more information on the PPP, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48 and *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

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Standardized Approach for Measuring Counterparty Credit Risk

On June 30, 2020 the Corporation adopted the new standardized approach for measuring counterparty credit risk (SA-CCR), which replaces the current exposure method for calculating the exposure amount of derivative contracts for risk-weighted assets and supplementary leverage exposure. Adoption of SA-CCR resulted in a decrease of approximately $15 billion in the Corporation's Standardized RWA, and a $66 billion decrease in supplementary leverage exposure.

Swap Dealer Capital Requirements

On July 22, 2020, the U.S. Commodity Futures Trading Commission (CFTC) issued a final rule to establish capital requirements for swap dealers and major swap participants that are not subject to existing U.S. prudential regulation. Under the rule, applicable subsidiaries of the Corporation would be permitted to elect one of two approaches to compute their regulatory capital. The first approach is a bank-based capital approach, which requires that firms maintain CET1 capital greater than or equal to 6.5 percent of the entity's RWA as calculated under Basel 3, Total capital greater than or equal to 8.0 percent of the entity's RWA as calculated under Basel 3 and Total capital greater than or equal to 8.0 percent of the entity's uncleared swap margin. The second approach is based on net liquid assets and requires that a firm maintain net capital greater than or equal to 2.0 percent of its uncleared swap margin. The final rule also includes reporting requirements. The impact on the Corporation is not expected to be significant.

Deduction of Unsecured Debt of G-SIBs

On October 20, 2020, the Federal Reserve, Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of the Currency (U.S. Agencies) finalized a rule requiring Advanced approaches institutions to deduct from regulatory capital certain investments in TLAC-eligible long-term debt and other pari passu or subordinated debt instruments issued by G-SIBs above a specified threshold. The final rule is intended to limit the interconnectedness between G-SIBs and is complementary to existing regulatory capital requirements that generally require banks to deduct investments in the regulatory capital of financial institutions. The final rule is effective April 1, 2021. The impact to the Corporation is not expected to be significant.

Volcker Rule

Effective January 1, 2020, we became subject to certain changes to the Volcker Rule, including removing the requirement for banking organizations to deduct from Tier 1 capital ownership interests of covered funds acquired or retained under the underwriting or market-making exemptions of the Volcker Rule, which the banking entity did not organize or offer.

Single-Counterparty Credit Limits

The Federal Reserve established single-counterparty credit limits (SCCL) for BHCs with total consolidated assets of $250 billion or more. The SCCL rule is designed to ensure that the maximum possible loss that a BHC could incur due to the default of a single counterparty or a group of connected counterparties would not endanger the BHC's survival, thereby reducing the probability of future financial crises. Beginning January 1, 2020, G-SIBs must calculate SCCL on a daily basis by dividing the aggregate net credit exposure to a given counterparty by the G-SIB's Tier 1 capital, ensuring that exposures to other G-SIBs and nonbank financial institutions regulated by the Federal Reserve do not breach 15 percent of Tier 1 capital and exposures to most other counterparties do not breach 25 percent of Tier 1 capital. Certain exposures, including exposures to the U.S. government, U.S. government-sponsored entities and qualifying central counterparties, are exempt from the credit limits.

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 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 $1.0 billion and net capital in excess of the greater of $500 million or a certain percentage of its reserve requirement. BofAS must also notify the Securities and Exchange Commission (SEC) in the event its tentative net capital is less than $5.0 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, 2020, BofAS had tentative net capital of $16.8 billion. BofAS also had regulatory net capital of $14.1 billion, which exceeded the minimum requirement of $2.9 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, 2020, MLPCC's regulatory net capital of $8.6 billion exceeded the minimum requirement of $1.4 billion.

MLPF&S provides retail services. At December 31, 2020, MLPF&S' regulatory net capital was $3.6 billion, which exceeded the minimum requirement of $180 million.

Our European broker-dealers are regulated by non-U.S. regulators. MLI, a U.K. investment firm, is regulated by the Prudential Regulation Authority and the FCA and is subject to certain regulatory capital requirements. At December 31, 2020, MLI's capital resources were $34.1 billion, which exceeded the minimum Pillar 1 requirement of $14.7 billion. BofASE, a French investment firm, is regulated by the Autorité de Contrôle Prudentiel et de Résolution and the Autorité des Marchés Financiers, and is subject to certain regulatory capital requirements. At December 31, 2020, BofASE's capital resources were $6.2 billion, which exceeded the minimum Pillar 1 requirement of $1.9 billion.

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Liquidity Risk

Funding and Liquidity Risk Management

Our primary liquidity risk management objective is to meet expected or unexpected cash flow and collateral needs 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 stress from the pandemic that began in the first quarter of 2020. For more information on the effects of the pandemic, see Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K and Executive Summary – Recent Developments – COVID-19 Pandemic on page 48.

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 those obligations 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 70. Under this governance framework, we have developed certain funding and liquidity risk management practices which include: maintaining liquidity at the parent company 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

We have intercompany arrangements with certain key subsidiaries under which we transferred certain assets of Bank of America Corporation, as the parent company, which is a separate and distinct legal entity from our bank and nonbank subsidiaries, and agreed to transfer certain additional parent company assets not needed to satisfy anticipated near-term expenditures, to NB Holdings Corporation, a wholly-owned holding company subsidiary (NB Holdings). The parent company 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 if it had not entered into these arrangements and transferred any assets.

In consideration for the transfer of assets, NB Holdings issued a subordinated note to the parent company 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 company with a committed line of credit that allows the parent company 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 company 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 company to transfer its remaining financial assets to NB Holdings if our projected liquidity resources deteriorate so severely that resolution of the parent company becomes imminent.

Global Liquidity Sources and Other Unencumbered Assets

We maintain liquidity available to the Corporation, including the parent company 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 company 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 a select group of non-U.S. government securities. We can quickly 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 16 presents average GLS for the three months ended December 31, 2020 and 2019.

Table 16 Average Global Liquidity Sources

	Three Months Ended December 31	
(Dollars in billions)	2020	2019
Bank entities	$ 773	$ 454
Nonbank and other entities [1]	170	122
Total Average Global Liquidity Sources	**$ 943**	$ 576

[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 $306 billion and $372 billion at December 31, 2020 and 2019. 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 company or nonbank subsidiaries may be subject to prior regulatory approval.

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Liquidity is also held in nonbank entities, including the Parent, NB Holdings and other regulated entities. Parent company and NB Holdings liquidity is typically in the form of cash deposited at BANA and is excluded from the liquidity at bank subsidiaries. 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 company 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 17 presents the composition of average GLS for the three months ended December 31, 2020 and 2019.

Table 17 Average Global Liquidity Sources Composition

	Three Months Ended December 31	
(Dollars in billions)	2020	2019
Cash on deposit	$ 322	$ 103
U.S. Treasury securities	141	98
U.S. agency securities, mortgage-backed securities, and other investment-grade securities	462	358
Non-U.S. government securities	18	17
Total Average Global Liquidity Sources	**$ 943**	$ 576

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 $584 billion and $464 billion for the three months ended December 31, 2020 and 2019. For the same periods, the average consolidated LCR was 122 percent and 116 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 company 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 company 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 Final Rule

On October 20, 2020, the U.S. Agencies finalized the Net Stable Funding Ratio (NSFR), a rule requiring large banks to maintain a minimum level of stable funding over a one-year period. The final rule 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 rule, which focuses on short-term liquidity risks. The final rule is effective July 1, 2021. The U.S. NSFR would apply to the Corporation on a consolidated basis and to our insured depository institutions. The Corporation expects to be in compliance within the final NSFR rule in the regulatory timeline provided and does not expect any significant impacts to the Corporation.

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 company funding impractical, certain other subsidiaries may issue their own debt.

We fund a substantial portion of our lending activities through our deposits, which were $1.80 trillion and $1.43 trillion at December 31, 2020 and 2019. 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 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

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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 – Federal Funds Sold or Purchased, Securities Financing Agreements, Short-term Borrowings and Restricted Cash* to the Consolidated Financial Statements.

Total long-term debt increased $22.1 billion to $262.9 billion during 2020, primarily due to debt issuances and valuation adjustments, partially offset by maturities and redemptions. 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 2020, we issued $56.9 billion of long-term debt consisting of $43.8 billion of notes issued by Bank of America Corporation, substantially all of which was TLAC compliant, $4.8 billion of notes issued by Bank of America, N.A. and $8.3 billion of other debt. During 2019, we issued $52.5 billion of long-term debt consisting of $29.3 billion of notes issued by Bank of America Corporation, substantially all of which was TLAC compliant, $10.9 billion of notes issued by Bank of America, N.A. and $12.3 billion of other debt.

During 2020, we had total long-term debt maturities and redemptions in the aggregate of $47.1 billion consisting of $22.6 billion for Bank of America Corporation, $11.5 billion for Bank of America, N.A. and $13.0 billion of other debt. During 2019, we had total long-term debt maturities and redemptions in the aggregate of $50.6 billion consisting of $21.1 billion for Bank of America Corporation, $19.9 billion for Bank of America, N.A. and $9.6 billion of other debt.

At December 31, 2020, Bank of America Corporation's senior notes of $191.2 billion included $146.6 billion of outstanding notes that are both TLAC eligible and callable at least one year before their stated maturities. Of these senior notes, $12.0 billion will be callable and become TLAC ineligible during 2021, and $15.3 billion, $14.6 billion, $11.7 billion and $13.2 billion will do so during each of 2022 through 2025, respectively, and $79.8 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 2020, we issued $7.3 billion of structured notes, which are unsecured 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 105.

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

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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 April 22, 2020, Fitch Ratings (Fitch) completed its review of large, complex securities trading and universal banks in the U.S., including Bank of America, in response to declining economic activity from the pandemic. The agency affirmed its long-term and short-term senior debt ratings for the Corporation and all of its rated subsidiaries, except for select issuer and instrument-level ratings that had previously been placed under criteria observation on March 4, 2020, following changes in the agency's bank rating criteria on February 28, 2020.

Concurrently, Fitch reached a conclusion on select under-criteria-observation designations for the Corporation and upgraded its long-term and short-term senior debt ratings of MLI and BofASE by one notch to AA-/F1+. The agency also upgraded its preferred stock rating for the Corporation by one notch to BBB and downgraded its subordinated debt rating for the Corporation by one notch to A-. According to Fitch, rating changes under criteria observation are the sole result of bank rating criteria changes and do not reflect a change in the underlying fundamentals of the institution. Fitch's outlook for all of our long-term ratings is currently Stable.

On June 9, 2020, Fitch affirmed its rating for the subordinated debt of BANA at A. This rating had remained under criteria observation following Fitch's broader rating actions.

On November 18, 2020, Moody's Investors Service (Moody's) affirmed its long-term and short-term debt ratings for the Corporation and all of its rated subsidiaries, which did not change during 2020. Moody's outlook for all of our long-term ratings is currently Stable.

The current ratings and Stable outlooks for the Corporation and its subsidiaries from Standard & Poor's Global Ratings also did not change during 2020.

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	Stable	A-	A-2	Stable	A+	F1	Stable
Bank of America, N.A.	Aa2	P-1	Stable	A+	A-1	Stable	AA-	F1+	Stable
Bank of America Europe Designated Activity Company	NR	NR	NR	A+	A-1	Stable	AA-	F1+	Stable
Merrill Lynch, Pierce, Fenner & Smith Incorporated	NR	NR	NR	A+	A-1	Stable	AA-	F1+	Stable
BofA Securities, Inc.	NR	NR	NR	A+	A-1	Stable	AA-	F1+	Stable
Merrill Lynch International	NR	NR	NR	A+	A-1	Stable	AA-	F1+	Stable
BofA Securities Europe SA	NR	NR	NR	A+	A-1	Stable	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 company, 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 81.

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 and Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

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Common Stock Dividends

For a summary of our declared quarterly cash dividends on common stock during 2020 and through February 24, 2021, 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 and BAC Capital Trust XIV, 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 and, together with the Guaranteed Notes, the Guaranteed Securities) that remained outstanding at December 31, 2020. The Corporation guarantees the payment of amounts and distributions with respect to the Trust Preferred 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, effectively constitutes a full and unconditional guarantee of the Trusts' payment obligations on the Trust Preferred Securities. 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, see Item 1. Business of our 2020 Annual Report on Form 10-K and Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

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.

For information on our credit risk management activities, see Consumer Portfolio Credit Risk Management below, Commercial Portfolio Credit Risk Management on page 91, Non-U.S. Portfolio on page 97, Allowance for Credit Losses on page 99, and *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements.

During 2020, the pandemic negatively impacted economic activity in the U.S. and around the world. In particular, beginning in the latter portion of the first quarter of 2020, the pandemic resulted in changes to consumer and business behaviors and restrictions on economic activity. These restrictions gave rise to increased unemployment and underemployment, lower business profits, increased business closures and bankruptcies, fluctuations and disruptions to commercial and consumer spending and markets, and lower global GDP, all of which negatively impacted our consumer and commercial credit portfolio.

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To provide relief to individuals and businesses in the U.S., economic stimulus packages were enacted throughout 2020, including the CARES Act, an executive order signed in August 2020 to establish the Lost Wage Assistance Program, and most recently, the Consolidated Appropriations Act enacted in December 2020. In addition, U.S. bank regulatory agencies issued interagency guidance to financial institutions that have worked with and continue to work with borrowers affected by COVID-19.

To support our customers, we implemented various loan modification programs and other forms of support beginning in March 2020, including offering loan payment deferrals, refunding certain fees, and pausing foreclosure sales, evictions and repossessions. Since June 2020, we have experienced a decline in the need for customer assistance as the number of customer accounts and balances on deferral decreased significantly. For information on the accounting for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Furthermore, as COVID-19 cases eased and initial restrictions lifted, the global economy began to improve. This improvement, coupled with the aforementioned relief, facilitated economic recovery, with unemployment dropping from double-digit highs in the second quarter of 2020 and GDP significantly rebounding in the third quarter of 2020.

However, economic recovery remains uneven, with certain sectors of the economy more significantly impacted from the pandemic (e.g., travel and entertainment). As a result, we have experienced increases in commercial reservable criticized utilized exposures driven by industries most heavily impacted by COVID-19. Also, we have seen modest increases in nonperforming loans driven by commercial loans and consumer real estate customer deferral activities, though consumer charge-offs remained low during 2020 due to payment deferrals and government stimulus benefits.

The pandemic and its full impact on the global economy continue to be highly uncertain. While COVID-19 cases have begun to ease from their January 2021 peak, the spread of new, more contagious variants could impact the magnitude and duration of this health crisis. However, ongoing virus containment efforts and vaccination progress, as well as the possibility of further government stimulus, could accelerate the macroeconomic recovery. For more information on how the pandemic may affect our operations, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48 and Item 1A. Risk Factors of our 2020 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

While COVID-19 is severely impacting economic activity, and is contributing to increasing nonperforming loans within certain consumer portfolios, it did not have a significant impact on consumer portfolio charge-offs during 2020 due to payment deferrals and government stimulus benefits. However, COVID-19 could lead to adverse impacts to credit quality metrics in future periods if negative economic conditions continue or worsen. During 2020, net charge-offs decreased $334 million to $2.7 billion primarily due to lower credit card losses.

The consumer allowance for loan and lease losses increased $5.5 billion in 2020 to $10.1 billion due to the adoption of the new CECL accounting standard and deterioration in the economic outlook resulting from the impact of COVID-19. For more information, see Allowance for Credit Losses on page 99.

For more information on our accounting policies regarding delinquencies, nonperforming status, charge-offs, TDRs for the consumer portfolio, as well as interest accrual policies and delinquency status for loan modifications related to the pandemic, 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.

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Table 19 Consumer Credit Quality

(Dollars in millions)	Outstandings		Nonperforming		Accruing Past Due 90 Days or More	
	December 31					
	2020	2019	**2020**	2019	**2020**	2019
Residential mortgage [1]	**$ 223,555**	$ 236,169	**$ 2,005**	$ 1,470	**$ 762**	$ 1,088
Home equity	**34,311**	40,208	**649**	536	**—**	—
Credit card	**78,708**	97,608	**n/a**	n/a	**903**	1,042
Direct/Indirect consumer [2]	**91,363**	90,998	**71**	47	**33**	33
Other consumer	**124**	192	**—**	—	**—**	—
Consumer loans excluding loans accounted for under the fair value option	**$ 428,061**	$ 465,175	**$ 2,725**	$ 2,053	**$ 1,698**	$ 2,163
Loans accounted for under the fair value option [3]	**735**	594				
Total consumer loans and leases	**$ 428,796**	$ 465,769				
Percentage of outstanding consumer loans and leases [4]	**n/a**	n/a	**0.64 %**	0.44 %	**0.40 %**	0.47 %
Percentage of outstanding consumer loans and leases, excluding fully-insured loan portfolios [4]	**n/a**	n/a	**0.65**	0.46	**0.22**	0.24

[1] Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2020 and 2019, residential mortgage includes $537 million and $740 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 $225 million and $348 million of loans on which interest was still accruing.

[2] Outstandings primarily include auto and specialty lending loans and leases of $46.4 billion and $50.4 billion, U.S. securities-based lending loans of $41.1 billion and $36.7 billion and non-U.S. consumer loans of $3.0 billion and $2.8 billion at December 31, 2020 and 2019.

[3] Consumer loans accounted for under the fair value option include residential mortgage loans of $298 million and $257 million and home equity loans of $437 million and $337 million at December 31, 2020 and 2019. 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, 2020 and 2019, $11 million and $6 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

(Dollars in millions)	Net Charge-offs		Net Charge-off Ratios [1]	
	2020	2019	**2020**	2019
Residential mortgage	**$ (30)**	$ (47)	**(0.01)%**	(0.02)%
Home equity	**(73)**	(358)	**(0.19)**	(0.81)
Credit card	**2,349**	2,948	**2.76**	3.12
Direct/Indirect consumer	**122**	209	**0.14**	0.23
Other consumer	**284**	234	**n/m**	n/m
Total	**$ 2,652**	$ 2,986	**0.59**	0.66

[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

Table 21 presents outstandings, nonperforming balances, net charge-offs, allowance for credit losses and provision for credit losses for the core and non-core portfolios within the consumer real estate portfolio. We categorize consumer real estate loans as core and non-core based on loan and customer characteristics such as origination date, product type, loan-to value (LTV), Fair Isaac Corporation (FICO) score and delinquency status consistent with our current consumer and mortgage servicing strategy. Generally, loans that were originated after January 1, 2010, qualified under GSE underwriting guidelines, or otherwise met our underwriting guidelines in place in 2015 are characterized as core loans. All other loans are generally characterized as non-core loans and represent runoff portfolios. Core loans as reported in Table 21 include loans held in the *Consumer Banking* and *GWIM* segments, as well as loans held for ALM activities in *All Other*.

As shown in Table 21, outstanding core consumer real estate loans decreased $15.4 billion during 2020 driven by a decrease of $10.5 billion in residential mortgage and a $4.9 billion decrease in home equity.

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Table 21 Consumer Real Estate Portfolio [1]

(Dollars in millions)	Outstandings December 31 2020	Outstandings December 31 2019	Nonperforming December 31 2020	Nonperforming December 31 2019	Net Charge-offs 2020	Net Charge-offs 2019
Core portfolio						
Residential mortgage	**$ 215,273**	$ 225,770	**$ 1,390**	$ 883	**$ (25)**	$ 7
Home equity	**30,328**	35,226	**462**	363	**(6)**	51
Total core portfolio	**245,601**	260,996	**1,852**	1,246	**(31)**	58
Non-core portfolio						
Residential mortgage	**8,282**	10,399	**615**	587	**(5)**	(54)
Home equity	**3,983**	4,982	**187**	173	**(67)**	(409)
Total non-core portfolio	**12,265**	15,381	**802**	760	**(72)**	(463)
Consumer real estate portfolio						
Residential mortgage	**223,555**	236,169	**2,005**	1,470	**(30)**	(47)
Home equity	**34,311**	40,208	**649**	536	**(73)**	(358)
Total consumer real estate portfolio	**$ 257,866**	$ 276,377	**$ 2,654**	$ 2,006	**$ (103)**	$ (405)

	Allowance for Loan and Lease Losses December 31 2020	Allowance for Loan and Lease Losses December 31 2019	Provision for Loan and Lease Losses 2020	Provision for Loan and Lease Losses 2019
Core portfolio				
Residential mortgage	**$ 374**	$ 229	**$ 136**	$ 22
Home equity	**599**	120	**135**	(58)
Total core portfolio	**973**	349	**271**	(36)
Non-core portfolio				
Residential mortgage	**85**	96	**75**	(134)
Home equity [2]	**(63)**	101	**(21)**	(510)
Total non-core portfolio	**22**	197	**54**	(644)
Consumer real estate portfolio				
Residential mortgage	**459**	325	**211**	(112)
Home equity [3]	**536**	221	**114**	(568)
Total consumer real estate portfolio	**$ 995**	$ 546	**$ 325**	$ (680)

[1] Outstandings and nonperforming loans exclude loans accounted for under the fair value option. Consumer loans accounted for under the fair value option include residential mortgage loans of $298 million and $257 million and home equity loans of $437 million and $337 million at December 31, 2020 and 2019. For more information, see *Note 21 – Fair Value Option* to the Consolidated Financial Statements.

[2] The home equity non-core allowance is in a negative position at December 31, 2020 as it includes expected recoveries of amounts previously charged off.

[3] Home equity allowance includes a reserve for unfunded lending commitments of $137 million at December 31, 2020.

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 52 percent of consumer loans and leases at December 31, 2020. Approximately 52 percent of the residential mortgage portfolio was in *Consumer Banking* and 40 percent was in *GWIM.* The remaining portion was in *All Other* and was comprised of loans used in our overall ALM activities, delinquent FHA loans repurchased pursuant to our servicing agreements with the Government National Mortgage Association as well as loans repurchased related to our representations and warranties.

Outstanding balances in the residential mortgage portfolio decreased $12.6 billion in 2020 as both loan sales and paydowns were partially offset by originations.

At December 31, 2020 and 2019, the residential mortgage portfolio included $11.8 billion and $18.7 billion of outstanding fully-insured loans, of which $2.8 billion and $11.2 billion had FHA insurance, with the remainder protected by Fannie Mae long-term standby agreements. The decline was primarily driven by sales of loans with FHA insurance during 2020.

Table 22 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.

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Table 22 Residential Mortgage – Key Credit Statistics

	Reported Basis [1]		Excluding Fully-insured Loans [1]	
	December 31			
(Dollars in millions)	2020	2019	2020	2019
Outstandings	$ 223,555	$ 236,169	$ 211,737	$ 217,479
Accruing past due 30 days or more	2,314	3,108	1,224	1,296
Accruing past due 90 days or more	762	1,088	—	—
Nonperforming loans [2]	2,005	1,470	2,005	1,470
Percent of portfolio				
Refreshed LTV greater than 90 but less than or equal to 100	2%	2 %	1%	2 %
Refreshed LTV greater than 100	1	1	1	1
Refreshed FICO below 620	2	3	1	2
2006 and 2007 vintages [3]	3	4	3	4

[1] Outstandings, accruing past due, nonperforming loans and percentages of portfolio exclude loans accounted for under the fair value option. For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.
[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.
[3] These vintages of loans accounted for $503 million and $365 million, or 25 percent, of nonperforming residential mortgage loans at both December 31, 2020 and 2019.

Nonperforming outstanding balances in the residential mortgage portfolio increased $535 million in 2020 primarily driven by COVID-19 deferral activity, as well as the inclusion of certain loans that, upon adoption of the new credit loss standard, became accounted for on an individual basis, which previously had been accounted for under a pool basis. Of the nonperforming residential mortgage loans at December 31, 2020, $892 million, or 45 percent, were current on contractual payments. Loans accruing past due 30 days or more decreased $72 million.

Net charge-offs increased $17 million to a net recovery of $30 million in 2020 compared to a net recovery of $47 million in 2019. This increase is due largely to lower recoveries from the sales of previously charged-off loans.

Of the $211.7 billion in total residential mortgage loans outstanding at December 31, 2020, as shown in Table 22, 27 percent were originated as interest-only loans. The outstanding balance of interest-only residential mortgage loans that have entered the amortization period was $5.9 billion, or 10 percent, at December 31, 2020. Residential mortgage loans that have entered the amortization period generally have experienced a higher rate of early stage delinquencies and nonperforming status compared to the residential mortgage portfolio as a whole. At December 31, 2020, $113 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 $1.2 billion, or less than one percent, for the entire residential mortgage portfolio. In addition, at December 31, 2020, $356 million, or six percent, of outstanding interest-only residential mortgage loans that had entered the amortization period were nonperforming, of which $96 million were contractually current, compared to $2.0 billion, or one percent, for the entire residential mortgage portfolio. 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 98 percent of these loans that have yet to enter the amortization period will not be required to make a fully-amortizing payment until 2022 or later.

Table 23 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 16 percent of outstandings at both December 31, 2020 and 2019. In the New York area, the New York-Northern New Jersey-Long Island MSA made up 14 percent and 13 percent of outstandings at December 31, 2020 and 2019.

Table 23 Residential Mortgage State Concentrations

	Outstandings [1]		Nonperforming [1]			
	December 31				Net Charge-offs	
(Dollars in millions)	2020	2019	2020	2019	2020	2019
California	$ 83,185	$ 88,998	$ 570	$ 274	$ (18)	$ (22)
New York	23,832	22,385	272	196	3	5
Florida	13,017	12,833	175	143	(5)	(12)
Texas	8,868	8,943	78	65	—	1
New Jersey	8,806	8,734	98	77	(1)	(4)
Other	74,029	75,586	812	715	(9)	(15)
Residential mortgage loans	$ 211,737	$ 217,479	$ 2,005	$ 1,470	$ (30)	$ (47)
Fully-insured loan portfolio	11,818	18,690				
Total residential mortgage loan portfolio	$ 223,555	$ 236,169				

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

Home Equity

At December 31, 2020, the home equity portfolio made up eight 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, 2020, 80 percent of the home equity portfolio was in *Consumer Banking*, 12 percent was in *All Other* and the remainder of the portfolio was primarily in *GWIM*. Outstanding balances in the home equity portfolio decreased

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$5.9 billion in 2020 primarily due to paydowns outpacing new originations and draws on existing lines. Of the total home equity portfolio at December 31, 2020 and 2019, $13.8 billion, or 40 percent, and $15.0 billion, or 37 percent, were in first-lien positions. At December 31, 2020, 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 $5.9 billion, or 17 percent, of our total home equity portfolio.

Unused HELOCs totaled $42.3 billion and $43.6 billion at December 31, 2020 and 2019. The HELOC utilization rate was 43 percent and 46 percent at December 31, 2020 and 2019.

Table 24 presents certain home equity portfolio key credit statistics.

Table 24 Home Equity – Key Credit Statistics [1]

	December 31	
(Dollars in millions)	**2020**	2019
Outstandings	**$ 34,311**	$ 40,208
Accruing past due 30 days or more [2]	**186**	218
Nonperforming loans [2, 3]	**649**	536
Percent of portfolio		
Refreshed CLTV greater than 90 but less than or equal to 100	**1%**	1 %
Refreshed CLTV greater than 100	**1**	2
Refreshed FICO below 620	**3**	3
2006 and 2007 vintages [4]	**16**	18

[1] Outstandings, accruing past due, nonperforming loans and percentages of the portfolio exclude loans accounted for under the fair value option. For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.
[2] Accruing past due 30 days or more include $25 million and $30 million and nonperforming loans include $88 million and $57 million of loans where we serviced the underlying first lien at December 31, 2020 and 2019.
[3] 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.
[4] These vintages of loans accounted for 36 percent and 34 percent of nonperforming home equity loans at December 31, 2020 and 2019.

Nonperforming outstanding balances in the home equity portfolio increased $113 million during 2020 primarily driven by COVID-19 deferral activity. Of the nonperforming home equity loans at December 31, 2020, $259 million, or 40 percent, were current on contractual payments. In addition, $237 million, or 36 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 $32 million in 2020.

Net charge-offs increased $285 million to a net recovery of $73 million in 2020 compared to a net recovery of $358 million in 2019 as the prior-year period included recoveries from non-core home equity loan sales.

Of the $34.3 billion in total home equity portfolio outstandings at December 31, 2020, as shown in Table 24, 15 percent require interest-only payments. The outstanding balance of HELOCs that have reached the end of their draw period and have entered the amortization period was $9.2 billion at December 31, 2020. 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, 2020, $121 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, 2020, $477 million, or five percent, were nonperforming. Loans that have yet to enter the amortization period in our interest-only portfolio are primarily post-2008 vintages and generally have better credit quality than the previous vintages that had entered the amortization period. We communicate to contractually current customers more than a year prior to the end of their draw period to inform them of the potential change to the payment structure before entering the amortization period, and provide payment options to customers prior to the end of the draw period.

Although 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, we can infer some of this information through a review of our HELOC portfolio that we service and that is still in its revolving period. During 2020, nine percent of these customers with an outstanding balance did not pay any principal on their HELOCs.

Table 25 presents outstandings, nonperforming balances and net charge-offs 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 13 percent of the outstanding home equity portfolio at both December 31, 2020 and 2019. The Los Angeles-Long Beach-Santa Ana MSA within California made up 11 percent of the outstanding home equity portfolio at both December 31, 2020 and 2019.

Table 25 Home Equity State Concentrations

	Outstandings [1]		Nonperforming [1]			
	December 31				Net Charge-offs	
(Dollars in millions)	**2020**	2019	**2020**	2019	**2020**	2019
California	**$ 9,488**	$ 11,232	**$ 143**	$ 101	**$ (26)**	$ (117)
Florida	**3,715**	4,327	**80**	71	**(11)**	(74)
New Jersey	**2,749**	3,216	**67**	56	**(3)**	(8)
New York	**2,495**	2,899	**103**	85	**(1)**	(1)
Massachusetts	**1,719**	2,023	**32**	29	**(1)**	(5)
Other	**14,145**	16,511	**224**	194	**(31)**	(153)
Total home equity loan portfolio	**$ 34,311**	$ 40,208	**$ 649**	$ 536	**$ (73)**	$ (358)

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

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Credit Card

At December 31, 2020, 97 percent of the credit card portfolio was managed in *Consumer Banking* with the remainder in *GWIM*. Outstandings in the credit card portfolio decreased $18.9 billion in 2020 to $78.7 billion due to lower retail spending and higher payments. Net charge-offs decreased $599 million to $2.3 billion during 2020 compared to net charge-offs of $2.9 billion in 2019 due to government stimulus benefits and payment deferrals associated with COVID-19. Credit card loans 30 days or more past due and still accruing interest decreased $346 million, and loans 90 days or more past due and still accruing interest decreased $139 million primarily due to government stimulus benefits and declines in loan balances.

Unused lines of credit for credit card increased to $342.4 billion at December 31, 2020 from $336.9 billion in 2019.

Table 26 presents certain state concentrations for the credit card portfolio.

Table 26 Credit Card State Concentrations

	Outstandings		Accruing Past Due 90 Days or More [1]		Net Charge-offs	
	December 31					
(Dollars in millions)	2020	2019	2020	2019	2020	2019
California	$ 12,543	$ 16,135	$ 166	$ 178	$ 419	$ 526
Florida	7,666	9,075	135	135	306	363
Texas	6,499	7,815	87	93	202	241
New York	4,654	5,975	76	80	188	243
Washington	3,685	4,639	21	26	56	71
Other	43,661	53,969	418	530	1,178	1,504
Total credit card portfolio	$ 78,708	$ 97,608	$ 903	$ 1,042	$ 2,349	$ 2,948

[1] For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Direct/Indirect Consumer

At December 31, 2020, 51 percent of the direct/indirect portfolio was included in *Consumer Banking* (consumer auto and recreational vehicle lending) and 49 percent was included in *GWIM* (principally securities-based lending loans). Outstandings in the direct/indirect portfolio increased $365 million in 2020 to $91.4 billion primarily due to increases in securities-based lending offset by lower originations in Auto.

Table 27 presents certain state concentrations for the direct/indirect consumer loan portfolio.

Table 27 Direct/Indirect State Concentrations

	Outstandings		Accruing Past Due 90 Days or More [1]		Net Charge-offs	
	December 31					
(Dollars in millions)	2020	2019	2020	2019	2020	2019
California	$ 12,248	$ 11,912	$ 6	$ 4	$ 20	$ 49
Florida	10,891	10,154	4	4	20	27
Texas	8,981	9,516	6	5	20	29
New York	6,609	6,394	2	1	9	12
New Jersey	3,572	3,468	—	1	2	4
Other	49,062	49,554	15	18	51	88
Total direct/indirect loan portfolio	$ 91,363	$ 90,998	$ 33	$ 33	$ 122	$ 209

[1] For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

Table 28 presents nonperforming consumer loans, leases and foreclosed properties activity during 2020 and 2019. During 2020, nonperforming consumer loans increased $672 million to $2.7 billion primarily driven by COVID-19 deferral activity, as well as the inclusion of $144 million of certain loans that were previously classified as purchased credit-impaired loans and accounted for under a pool basis.

At December 31, 2020, $892 million, or 33 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, 2020, $1.2 billion, or 45 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 decreased $106 million in 2020 to $123 million as the Corporation has paused formal loan foreclosure proceedings and foreclosure sales for occupied properties during 2020.

Nonperforming loans also include certain loans that have been modified in TDRs where economic concessions have been granted to borrowers experiencing financial difficulties. Nonperforming TDRs are included in Table 28. For more information on our loan modification programs offered in response to the pandemic, most of which are not TDRs, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48 and *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

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Table 28 Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

(Dollars in millions)	2020	2019
Nonperforming loans and leases, January 1	**$ 2,053**	$ 3,842
Additions	**2,278**	1,407
Reductions:		
Paydowns and payoffs	**(440)**	(701)
Sales	**(38)**	(1,523)
Returns to performing status [1]	**(1,014)**	(766)
Charge-offs	**(78)**	(111)
Transfers to foreclosed properties	**(36)**	(95)
Total net additions/(reductions) to nonperforming loans and leases	**672**	(1,789)
Total nonperforming loans and leases, December 31	**2,725**	2,053
Foreclosed properties, December 31 [2]	**123**	229
Nonperforming consumer loans, leases and foreclosed properties, December 31	**$ 2,848**	$ 2,282
Nonperforming consumer loans and leases as a percentage of outstanding consumer loans and leases [3]	0.64 %	0.44 %
Nonperforming consumer loans, leases and foreclosed properties as a percentage of outstanding consumer loans, leases and foreclosed properties [3]	0.66	0.49

[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 $119 million and $260 million at December 31, 2020 and 2019.
[3] Outstanding consumer loans and leases exclude loans accounted for under the fair value option.

Table 29 presents TDRs for the consumer real estate portfolio. Performing TDR balances are excluded from nonperforming loans and leases in Table 28. For more information on our loan modification programs offered in response to the pandemic, most of which are not TDRs, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48 and *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Table 29 Consumer Real Estate Troubled Debt Restructurings

	December 31, 2020			December 31, 2019		
(Dollars in millions)	Nonperforming	Performing	Total	Nonperforming	Performing	Total
Residential mortgage [1, 2]	**$ 1,195**	**$ 2,899**	**$ 4,094**	$ 921	$ 3,832	$ 4,753
Home equity [3]	**248**	**836**	**1,084**	252	977	1,229
Total consumer real estate troubled debt restructurings	**$ 1,443**	**$ 3,735**	**$ 5,178**	$ 1,173	$ 4,809	$ 5,982

[1] At December 31, 2020 and 2019, residential mortgage TDRs deemed collateral dependent totaled $1.4 billion and $1.2 billion, and included $1.0 billion and $748 million of loans classified as nonperforming and $361 million and $468 million of loans classified as performing.
[2] At December 31, 2020 and 2019, residential mortgage performing TDRs include $1.5 billion and $2.1 billion of loans that were fully-insured.
[3] At December 31, 2020 and 2019, home equity TDRs deemed collateral dependent totaled $407 million and $442 million, and include $216 million and $209 million of loans classified as nonperforming and $191 million and $233 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, 2020 and 2019, our credit card and other consumer TDR portfolio was $701 million and $679 million, of which $614 million and $570 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

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non-U.S. portfolio, we evaluate exposures by region and by country. Tables 34, 37 and 40 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 Commercial Portfolio Credit Risk Management – Industry Concentrations on page 95 and Table 37.

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 2020, commercial asset quality weakened as a result of the economic impact from COVID-19. However, there were also positive signs during this period. The draws by large corporate and commercial clients contributing to the $67.2 billion loan growth in the first quarter of 2020 have largely been repaid, as emergency or contingent funding was no longer needed or clients were able to access capital markets. Additionally, as part of the CARES Act, we had $22.7 billion of PPP loans outstanding with our small business clients at December 31, 2020, which are included in U.S. small business commercial in the tables in this section. For more information on PPP loans, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Credit quality of commercial real estate borrowers has begun to stabilize in many sectors as certain economies have reopened. Certain sectors, including hospitality and retail, continue to be negatively impacted as a result of COVID-19. Moreover, many real estate markets, while improving, are still experiencing some disruptions in demand, supply chain challenges and tenant difficulties.

The commercial allowance for loan and lease losses increased $3.9 billion during 2020 to $8.7 billion due to the deterioration in the economic outlook resulting from the impact of COVID-19. For more information, see Allowance for Credit Losses on page 99.

Total commercial utilized credit exposure decreased $15.0 billion during 2020 to $620.3 billion driven by lower loans and leases. The utilization rate for loans and leases, SBLCs and financial guarantees, and commercial letters of credit, in the aggregate, was 57 percent at December 31, 2020 and 58 percent at December 31, 2019.

Table 30 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 30 Commercial Credit Exposure by Type

	Commercial Utilized [1]		Commercial Unfunded [2, 3, 4]		Total Commercial Committed	
	December 31					
(Dollars in millions)	2020	2019	2020	2019	2020	2019
Loans and leases	$ 499,065	$ 517,657	$ 404,740	$ 405,834	$ 903,805	$ 923,491
Derivative assets [5]	47,179	40,485	—	—	47,179	40,485
Standby letters of credit and financial guarantees	34,616	36,062	538	468	35,154	36,530
Debt securities and other investments	22,618	25,546	4,827	5,101	27,445	30,647
Loans held-for-sale	8,378	7,047	9,556	15,135	17,934	22,182
Operating leases	6,424	6,660	—	—	6,424	6,660
Commercial letters of credit	855	1,049	280	451	1,135	1,500
Other	1,168	800	—	—	1,168	800
Total	$ 620,303	$ 635,306	$ 419,941	$ 426,989	$ 1,040,244	$ 1,062,295

(1) Commercial utilized exposure includes loans of $5.9 billion and $7.7 billion and issued letters of credit with a notional amount of $89 million and $170 million accounted for under the fair value option at December 31, 2020 and 2019.
(2) Commercial unfunded exposure includes commitments accounted for under the fair value option with a notional amount of $3.9 billion and $4.2 billion at December 31, 2020 and 2019.
(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 $10.5 billion and $10.6 billion at December 31, 2020 and 2019.
(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 $42.5 billion and $33.9 billion at December 31, 2020 and 2019. Not reflected in utilized and committed exposure is additional non-cash derivative collateral held of $39.3 billion and $35.2 billion at December 31, 2020 and 2019, which consists primarily of other marketable securities.

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Outstanding commercial loans and leases decreased $18.6 billion during 2020 primarily driven by repayments due in part to reduced working capital needs and a favorable capital markets environment, partially offset by $22.7 billion of PPP loans outstanding at December 31, 2020. Nonperforming commercial loans increased $728 million across industries, and commercial reservable criticized utilized exposure increased $27.2 billion spread across several industries, including travel and entertainment, as a result of weaker economic conditions arising from COVID-19. Table 31 presents our commercial loans and leases portfolio and related credit quality information at December 31, 2020 and 2019.

Table 31 Commercial Credit Quality

	Outstandings		Nonperforming		Accruing Past Due 90 Days or More [3]	
	December 31					
(Dollars in millions)	**2020**	2019	**2020**	2019	**2020**	2019
Commercial and industrial:						
U.S. commercial	**$ 288,728**	$ 307,048	**$ 1,243**	$ 1,094	**$ 228**	$ 106
Non-U.S. commercial	**90,460**	104,966	**418**	43	**10**	8
Total commercial and industrial	**379,188**	412,014	**1,661**	1,137	**238**	114
Commercial real estate	**60,364**	62,689	**404**	280	**6**	19
Commercial lease financing	**17,098**	19,880	**87**	32	**25**	20
	456,650	494,583	**2,152**	1,449	**269**	153
U.S. small business commercial [1]	**36,469**	15,333	**75**	50	**115**	97
Commercial loans excluding loans accounted for under the fair value option	**493,119**	509,916	**2,227**	1,499	**384**	250
Loans accounted for under the fair value option [2]	**5,946**	7,741				
Total commercial loans and leases	**$ 499,065**	$ 517,657				

[1] Includes card-related products.
[2] Commercial loans accounted for under the fair value option include U.S. commercial of $2.9 billion and $4.7 billion and non-U.S. commercial of $3.0 billion and $3.1 billion at December 31, 2020 and 2019. For more information on the fair value option, see *Note 21 – Fair Value Option* to the Consolidated Financial Statements.
[3] For information on our interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Table 32 presents net charge-offs and related ratios for our commercial loans and leases for 2020 and 2019.

Table 32 Commercial Net Charge-offs and Related Ratios

	Net Charge-offs		Net Charge-off Ratios [1]	
(Dollars in millions)	**2020**	2019	**2020**	2019
Commercial and industrial:				
U.S. commercial	**$ 718**	$ 256	**0.23%**	0.08%
Non-U.S. commercial	**155**	84	**0.15**	0.08
Total commercial and industrial	**873**	340	**0.21**	0.08
Commercial real estate	**270**	29	**0.43**	0.05
Commercial lease financing	**59**	21	**0.32**	0.10
	1,202	390	**0.24**	0.08
U.S. small business commercial	**267**	272	**0.86**	1.83
Total commercial	**$ 1,469**	$ 662	**0.28**	0.13

[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 33 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 increased $27.2 billion during 2020, which was spread across several industries, including travel and entertainment, as a result of weaker economic conditions arising from COVID-19. At December 31, 2020 and 2019, 79 percent and 90 percent of commercial reservable criticized utilized exposure was secured.

Table 33 Commercial Reservable Criticized Utilized Exposure [1, 2]

	December 31			
(Dollars in millions)	**2020**		2019	
Commercial and industrial:				
U.S. commercial	**$ 21,388**	**6.83 %**	$ 8,272	2.46%
Non-U.S. commercial	**5,051**	**5.03**	989	0.89
Total commercial and industrial	**26,439**	**6.40**	9,261	2.07
Commercial real estate	**10,213**	**16.42**	1,129	1.75
Commercial lease financing	**714**	**4.18**	329	1.66
	37,366	**7.59**	10,719	2.01
U.S. small business commercial	**1,300**	**3.56**	733	4.78
Total commercial reservable criticized utilized exposure [1]	**$ 38,666**	**7.31**	$ 11,452	2.09

[1] Total commercial reservable criticized utilized exposure includes loans and leases of $36.6 billion and $10.7 billion and commercial letters of credit of $2.1 billion and $715 million at December 31, 2020 and 2019.
[2] Percentages are calculated as commercial reservable criticized utilized exposure divided by total commercial reservable utilized exposure for each exposure category.

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Commercial and Industrial

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

U.S. Commercial

At December 31, 2020, 65 percent of the U.S. commercial loan portfolio, excluding small business, was managed in *Global Banking,* 18 percent in *Global Markets*, 15 percent in *GWIM* (generally business-purpose loans for high net worth clients) and the remainder primarily in *Consumer Banking*. U.S. commercial loans decreased $18.3 billion during 2020 driven by *Global Banking*. Reservable criticized utilized exposure increased $13.1 billion, which was spread across several industries, including travel and entertainment, as a result of weaker economic conditions arising from COVID-19.

Non-U.S. Commercial

At December 31, 2020, 79 percent of the non-U.S. commercial loan portfolio was managed in *Global Banking* and 21 percent in *Global Markets*. Non-U.S. commercial loans decreased $14.5 billion during 2020, primarily in *Global Banking*. For information on the non-U.S. commercial portfolio, see Non-U.S. Portfolio on page 97.

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 declined by $2.3 billion during 2020 as paydowns exceeded new originations. Reservable criticized utilized exposure increased $9.1 billion to $10.2 billion from $1.1 billion, or 16.42 and 1.75 percent of the commercial real estate portfolio at December 31, 2020 and 2019, due to downgrades driven by the impact of COVID-19 across industries, primarily hotels. Although we have observed property-level improvements in a number of the most impacted sectors, the length of time for recovery has been slower than originally anticipated, which has prompted additional downgrades. The portfolio remains diversified across property types and geographic regions. California represented the largest state concentration at 23 percent and 24 percent of the commercial real estate portfolio at December 31, 2020 and 2019. 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 2020, we continued to see low default rates and varying degrees of improvement in 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 to 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 34 presents outstanding commercial real estate loans by geographic region, based on the geographic location of the collateral, and by property type.

Table 34 Outstanding Commercial Real Estate Loans

(Dollars in millions)	December 31 2020	2019
By Geographic Region		
California	$ 14,028	$ 14,910
Northeast	11,628	12,408
Southwest	8,551	8,408
Southeast	6,588	5,937
Florida	4,294	3,984
Midwest	3,483	3,203
Illinois	2,594	3,349
Midsouth	2,370	2,468
Northwest	1,634	1,638
Non-U.S.	3,187	3,724
Other [1]	2,007	2,660
Total outstanding commercial real estate loans	**$ 60,364**	$ 62,689
By Property Type		
Non-residential		
Office	$ 17,667	$ 17,902
Industrial / Warehouse	8,330	8,677
Shopping centers / Retail	7,931	8,183
Hotels / Motels	7,226	6,982
Multi-family rental	7,051	7,250
Unsecured	2,336	3,438
Multi-use	1,460	1,788
Other	7,146	6,958
Total non-residential	59,147	61,178
Residential	1,217	1,511
Total outstanding commercial real estate loans	**$ 60,364**	$ 62,689

[1] Includes unsecured loans to real estate investment trusts and national home builders whose portfolios of properties span multiple geographic regions and properties in the states of Colorado, Utah, Hawaii, Wyoming and Montana.

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 includes $22.7 billion of PPP loans outstanding at December 31, 2020. Excluding PPP, credit card-related products were 50 percent and 52 percent of the U.S. small business commercial portfolio at December 31, 2020 and 2019. Of the U.S. small business commercial net charge-offs, 91 percent and 94 percent were credit card-related products in 2020 and 2019.

Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity

Table 35 presents the nonperforming commercial loans, leases and foreclosed properties activity during 2020 and 2019.

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Nonperforming loans do not include loans accounted for under the fair value option. During 2020, nonperforming commercial loans and leases increased $728 million to $2.2 billion, primarily driven by the impact of COVID-19. At December 31, 2020, 84 percent of commercial nonperforming loans, leases and foreclosed properties were secured and 66 percent were contractually current. Commercial nonperforming loans were carried at 81 percent of their unpaid principal balance before consideration of the allowance for loan and lease losses, as the carrying value of these loans has been reduced to the estimated collateral value less costs to sell.

Table 35 Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity [1, 2]

(Dollars in millions)	2020	2019
Nonperforming loans and leases, January 1	**$ 1,499**	$ 1,102
Additions	**3,518**	2,048
Reductions:		
Paydowns	**(1,002)**	(648)
Sales	**(350)**	(215)
Returns to performing status [3]	**(172)**	(120)
Charge-offs	**(1,208)**	(478)
Transfers to foreclosed properties	**(2)**	(9)
Transfers to loans held-for-sale	**(56)**	(181)
Total net additions to nonperforming loans and leases	**728**	397
Total nonperforming loans and leases, December 31	**2,227**	1,499
Foreclosed properties, December 31	**41**	56
Nonperforming commercial loans, leases and foreclosed properties, December 31	**2,268**	1,555
Nonperforming commercial loans and leases as a percentage of outstanding commercial loans and leases [4]	**0.45 %**	0.29 %
Nonperforming commercial loans, leases and foreclosed properties as a percentage of outstanding commercial loans, leases and foreclosed properties [4]	**0.46**	0.30

(1) Balances do not include nonperforming loans held-for-sale of $359 million and $239 million at December 31, 2020 and 2019.
(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 36 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. For more information on TDRs, see *Note 5 – Outstanding Loans and Leases and Allowance for Credit Losses* to the Consolidated Financial Statements. For more information on our loan modification programs offered in response to the pandemic, most of which are not TDRs, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48 and *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

Table 36 Commercial Troubled Debt Restructurings

	December 31, 2020			December 31, 2019		
(Dollars in millions)	Nonperforming	Performing	Total	Nonperforming	Performing	Total
Commercial and industrial:						
U.S. commercial	**$ 509**	**$ 850**	**$ 1,359**	$ 617	$ 999	$ 1,616
Non-U.S. commercial	**49**	**119**	**168**	41	193	234
Total commercial and industrial	**558**	**969**	**1,527**	658	1,192	1,850
Commercial real estate	**137**	**—**	**137**	212	14	226
Commercial lease financing	**42**	**2**	**44**	18	31	49
	737	**971**	**1,708**	888	1,237	2,125
U.S. small business commercial	**—**	**29**	**29**	—	27	27
Total commercial troubled debt restructurings	**$ 737**	**$ 1,000**	**$ 1,737**	$ 888	$ 1,264	$ 2,152

Industry Concentrations

Table 37 presents commercial committed and utilized credit exposure by industry and the total net credit default protection purchased to cover the funded and unfunded portions of certain credit exposures. Our commercial credit exposure is diversified across a broad range of industries. Total commercial committed exposure decreased $22.1 billion, or two percent, during 2020 to $1.0 trillion. The decrease in commercial committed exposure was concentrated in the Global commercial banks, Asset managers and funds, Utilities, and Real estate industry sectors. Decreases were partially offset by increased exposure to the Finance companies and Automobiles and components industry sectors.

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. The MRC oversees industry limit governance.

Asset managers and funds, our largest industry concentration with committed exposure of $101.5 billion, decreased $8.5 billion, or eight percent, during 2020.

Real estate, our second largest industry concentration with committed exposure of $92.4 billion, decreased $4.0 billion, or four percent, during 2020. For more information on the commercial real estate and related portfolios, see Commercial Portfolio Credit Risk Management – Commercial Real Estate on page 94.

Capital goods, our third largest industry concentration with committed exposure of $81.0 billion, remained flat during 2020.

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Given the widespread impact of the pandemic on the U.S. and global economy, a number of industries have been and will likely continue to be adversely impacted. We continue to monitor all industries, particularly higher risk industries which are experiencing or could experience a more significant impact to their financial condition. The impact of the pandemic has also placed significant stress on global demand for oil. Our energy-related committed exposure decreased $3.3 billion, or nine percent, during 2020 to $33.0 billion, driven by declines in exploration and production, refining and marketing exposure, energy equipment and services, partially offset by an increase in our integrated client exposure. For more information on COVID-19, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48.

Table 37 Commercial Credit Exposure by Industry [1]

	Commercial Utilized		Total Commercial Committed [2]	
	December 31			
(Dollars in millions)	2020	2019	2020	2019
Asset managers and funds	$ 68,093	$ 71,386	$ 101,540	$ 110,069
Real estate [3]	69,267	70,361	92,414	96,370
Capital goods	39,911	41,082	80,959	80,892
Finance companies	46,948	40,173	70,004	63,942
Healthcare equipment and services	33,759	34,353	57,880	55,918
Government and public education	41,669	41,889	56,212	53,566
Materials	24,548	26,663	50,792	52,129
Retailing	24,749	25,868	49,710	48,317
Consumer services	32,000	28,434	48,026	49,071
Food, beverage and tobacco	22,871	24,163	44,628	45,956
Commercial services and supplies	21,154	23,103	38,149	38,944
Transportation	23,426	23,449	33,444	33,028
Energy	13,936	16,406	32,983	36,326
Utilities	12,387	12,383	29,234	36,060
Individuals and trusts	18,784	18,927	25,881	27,817
Technology hardware and equipment	10,515	10,646	24,796	24,072
Media	13,144	12,445	24,677	23,645
Software and services	11,709	10,432	23,647	20,556
Global commercial banks	20,751	30,171	22,922	32,345
Automobiles and components	10,956	7,345	20,765	14,910
Consumer durables and apparel	9,232	10,193	20,223	21,245
Vehicle dealers	15,028	18,013	18,696	21,435
Pharmaceuticals and biotechnology	5,217	5,964	16,349	20,206
Telecommunication services	9,411	9,154	15,605	16,113
Insurance	5,921	6,673	13,491	15,218
Food and staples retailing	5,209	6,290	11,810	10,392
Financial markets infrastructure (clearinghouses)	4,939	5,496	8,648	7,997
Religious and social organizations	4,769	3,844	6,759	5,756
Total commercial credit exposure by industry	$ 620,303	$ 635,306	$ 1,040,244	$ 1,062,295
Net credit default protection purchased on total commitments [4]			$ (4,170)	$ (3,349)

(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 $10.5 billion and $10.6 billion at December 31, 2020 and 2019.
(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.
(4) Represents net notional credit protection purchased to hedge funded and unfunded exposures for which we elected the fair value option, as well as certain other credit exposures. For more information, see Commercial Portfolio Credit Risk Management – Risk Mitigation.

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, 2020 and 2019, 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 $4.2 billion and $3.3 billion. We recorded net losses of $240 million in 2020 compared to net losses of $145 million in 2019 for these same positions. The gains and losses on these instruments were 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 44. For more information, see Trading Risk Management on page 102.

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Tables 38 and 39 present the maturity profiles and the credit exposure debt ratings of the net credit default protection portfolio at December 31, 2020 and 2019.

Table 38 Net Credit Default Protection by Maturity

	December 31	
	2020	2019
Less than or equal to one year	**65 %**	54 %
Greater than one year and less than or equal to five years	**34**	45
Greater than five years	**1**	1
Total net credit default protection	**100 %**	100 %

Table 39 Net Credit Default Protection by Credit Exposure Debt Rating

	Net Notional [1]	**Percent of Total**	Net Notional [1]	Percent of Total
	December 31			
(Dollars in millions)	**2020**		2019	
Ratings [2, 3]				
A	**$ (250)**	**6.0 %**	$ (697)	20.8 %
BBB	**(1,856)**	**44.5**	(1,089)	32.5
BB	**(1,363)**	**32.7**	(766)	22.9
B	**(465)**	**11.2**	(373)	11.1
CCC and below	**(182)**	**4.4**	(119)	3.6
NR [4]	**(54)**	**1.2**	(305)	9.1
Total net credit default protection	**$ (4,170)**	**100.0 %**	$ (3,349)	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 40 presents our 20 largest non-U.S. country exposures at December 31, 2020. These exposures accounted for 90 percent and 88 percent of our total non-U.S. exposure at December 31, 2020 and 2019. Net country exposure for these 20 countries increased $21.2 billion in 2020. The majority of the increase was due to higher deposits with central banks in Germany and Japan.

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.

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Table 40 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 2020	Hedges and Credit Default Protection	**Net Country Exposure at December 31 2020**	Increase (Decrease) from December 31 2019
United Kingdom	$ 31,817	$ 18,201	$ 6,601	$ 4,086	$ 60,705	$ (1,233)	**$ 59,472**	$ 3,628
Germany	29,169	10,772	2,155	4,492	46,588	(1,685)	**44,903**	14,075
Canada	8,657	8,681	1,624	2,628	21,590	(456)	**21,134**	1,012
France	8,219	8,353	988	4,329	21,889	(1,098)	**20,791**	4,536
Japan	12,679	1,086	1,115	3,325	18,205	(709)	**17,496**	6,964
China	10,098	67	1,529	1,952	13,646	(226)	**13,420**	(2,167)
Australia	6,559	4,242	372	2,235	13,408	(321)	**13,087**	1,985
Brazil	5,854	696	708	3,288	10,546	(253)	**10,293**	(1,479)
Netherlands	4,654	4,109	486	997	10,246	(562)	**9,684**	(643)
Singapore	4,115	278	359	4,603	9,355	(73)	**9,282**	1,456
South Korea	5,161	856	488	2,214	8,719	(168)	**8,551**	(154)
India	5,428	221	353	1,989	7,991	(180)	**7,811**	(4,206)
Switzerland	3,811	2,817	412	130	7,170	(275)	**6,895**	(490)
Hong Kong	4,434	452	584	1,128	6,598	(61)	**6,537**	(519)
Mexico	3,712	1,379	205	1,112	6,408	(121)	**6,287**	(1,524)
Italy	2,456	1,784	553	1,568	6,361	(669)	**5,692**	315
Belgium	2,471	1,334	505	797	5,107	(140)	**4,967**	(1,540)
Spain	2,835	1,156	262	914	5,167	(351)	**4,816**	94
Ireland	2,785	1,050	100	253	4,188	(23)	**4,165**	798
United Arab Emirates	2,218	136	266	77	2,697	(10)	**2,687**	(900)
Total top 20 non-U.S. countries exposure	$ 157,132	$ 67,670	$ 19,665	$ 42,117	$ 286,584	$ (8,614)	**$ 277,970**	$ 21,241

Our largest non-U.S. country exposure at December 31, 2020 was the U.K. with net exposure of $59.5 billion, which represents a $3.6 billion increase from December 31, 2019. Our second largest non-U.S. country exposure was Germany with net exposure of $44.9 billion at December 31, 2020, a $14.1 billion increase from December 31, 2019. The increase in Germany was primarily driven by an increase in deposits with the central bank.

In light of the global pandemic, we are monitoring our non-U.S. exposure closely, particularly in countries where restrictions on certain activities, in an attempt to contain the spread and impact of the virus, have affected and will likely continue to adversely affect economic activity. We are managing the impact to our international business operations as part of our overall response framework and are taking actions to manage exposure carefully in impacted regions while supporting the needs of our clients. The magnitude and duration of the pandemic and its full impact on the global economy continue to be highly uncertain.

The impact of COVID-19 could have an adverse impact on the global economy for a prolonged period of time. For more information on how the pandemic may affect our operations, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48 and Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

Table 41 presents countries that had total cross-border exposure, including the notional amount of cash loaned under secured financing agreements, exceeding one percent of our total assets at December 31, 2020. Local exposure, defined as exposure booked in local offices of a respective country with clients in the same country, is excluded. At December 31, 2020, the U.K. and France were the only countries where their respective total cross-border exposures exceeded one percent of our total assets. No other countries had total cross-border exposure that exceeded 0.75 percent of our total assets at December 31, 2020.

Table 41 Total Cross-border Exposure Exceeding One Percent of Total Assets

(Dollars in millions)	December 31	Public Sector	Banks	Private Sector	Cross-border Exposure	Exposure as a Percent of Total Assets
United Kingdom	**2020**	**$ 4,733**	**$ 2,269**	**$ 95,180**	**$ 102,182**	**3.62 %**
	2019	1,859	3,580	93,232	98,671	4.05
	2018	1,505	3,458	46,191	51,154	2.17
France	**2020**	**3,073**	**1,726**	**26,399**	**31,198**	**1.11**
	2019	736	2,473	23,172	26,381	1.08
	2018	633	2,385	29,847	32,865	1.40

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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 to be based on management's best estimate of lifetime ECL inherent in the Corporation's relevant financial assets. Upon adoption of the new accounting standard, the Corporation recorded a net increase of $3.3 billion in the allowance for credit losses which was comprised of a net increase of $2.9 billion in the allowance for loan and lease losses and an increase of $310 million in the reserve for unfunded lending commitments. The net increase was primarily driven by a $3.1 billion increase related to the credit card portfolio.

The allowance for credit losses further increased by $7.2 billion from January 1, 2020 to $20.7 billion at December 31, 2020, which included a $5.0 billion reserve increase related to the commercial portfolio and a $2.2 billion reserve increase related to the consumer portfolio. The increases were driven by deterioration in the economic outlook resulting from the impact of COVID-19.

The following table presents an allocation of the allowance for credit losses by product type for December 31, 2020, January 1, 2020 and December 31, 2019 (prior to the adoption of the CECL accounting standard).

Table 42 Allocation of the Allowance for Credit Losses by Product Type

(Dollars in millions)	December 31, 2020 Amount	December 31, 2020 Percent of Total	December 31, 2020 Percent of Loans and Leases Outstanding [1]	January 1, 2020 Amount	January 1, 2020 Percent of Total	January 1, 2020 Percent of Loans and Leases Outstanding [1]	December 31, 2019 Amount	December 31, 2019 Percent of Total	December 31, 2019 Percent of Loans and Leases Outstanding [1]
Allowance for loan and lease losses									
Residential mortgage	$ 459	2.44 %	0.21 %	$ 212	1.72 %	0.09 %	$ 325	3.45 %	0.14 %
Home equity	399	2.12	1.16	228	1.84	0.57	221	2.35	0.55
Credit card	8,420	44.79	10.70	6,809	55.10	6.98	3,710	39.39	3.80
Direct/Indirect consumer	752	4.00	0.82	566	4.58	0.62	234	2.49	0.26
Other consumer	41	0.22	n/m	55	0.45	n/m	52	0.55	n/m
Total consumer	10,071	53.57	2.35	7,870	63.69	1.69	4,542	48.23	0.98
U.S. commercial [2]	5,043	26.82	1.55	2,723	22.03	0.84	3,015	32.02	0.94
Non-U.S. commercial	1,241	6.60	1.37	668	5.41	0.64	658	6.99	0.63
Commercial real estate	2,285	12.15	3.79	1,036	8.38	1.65	1,042	11.07	1.66
Commercial lease financing	162	0.86	0.95	61	0.49	0.31	159	1.69	0.80
Total commercial	8,731	46.43	1.77	4,488	36.31	0.88	4,874	51.77	0.96
Allowance for loan and lease losses	18,802	100.00 %	2.04	12,358	100.00 %	1.27	9,416	100.00 %	0.97
Reserve for unfunded lending commitments	1,878			1,123			813		
Allowance for credit losses	$ 20,680			$ 13,481			$ 10,229		

[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. Consumer loans accounted for under the fair value option include residential mortgage loans of $298 million at December 31, 2020 and $257 million at January 1, 2020 and December 31, 2019 and home equity loans of $437 million at December 31, 2020 and $337 million at January 1, 2020 and December 31, 2019. Commercial loans accounted for under the fair value option include U.S. commercial loans of $2.9 billion, $5.1 billion and $4.7 billion at December 31, 2020, January 1, 2020 and December 31, 2019, and non-U.S. commercial loans of $3.0 billion, $3.2 billion and $3.1 billion at December 31, 2020, January 1, 2020 and December 31, 2019.

[2] Includes allowance for loan and lease losses for U.S. small business commercial loans of $1.5 billion, $831 million and $523 million at December 31, 2020, January 1, 2020 and December 31, 2019.

n/m = not meaningful

Net charge-offs for 2020 were $4.1 billion compared to $3.6 billion in 2019 driven by increases in commercial losses. The provision for credit losses increased $7.7 billion to $11.3 billion during 2020 compared to 2019. The allowance for credit losses included a reserve build of $7.2 billion for 2020, excluding the impact of the new accounting standard, primarily due to the deterioration in the economic outlook resulting from the impact of COVID-19 on both the consumer and commercial portfolios. The provision for credit losses for the consumer portfolio, including unfunded lending commitments, increased $2.0 billion to $4.9 billion during 2020 compared to 2019. The provision for credit losses for the commercial portfolio, including unfunded lending commitments, increased $5.7 billion to $6.5 billion during 2020 compared to 2019.

The following table presents a rollforward of the allowance for credit losses, including certain loan and allowance ratios for 2020, noting that measurement of the allowance for credit losses for 2019 was based on management's estimate of probable incurred losses. 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.

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Table 43 Allowance for Credit Losses

(Dollars in millions)	2020	2019
Allowance for loan and lease losses, January 1	**$ 12,358**	$ 9,601
Loans and leases charged off		
Residential mortgage	**(40)**	(93)
Home equity	**(58)**	(429)
Credit card	**(2,967)**	(3,535)
Direct/Indirect consumer	**(372)**	(518)
Other consumer	**(307)**	(249)
Total consumer charge-offs	**(3,744)**	(4,824)
U.S. commercial [1]	**(1,163)**	(650)
Non-U.S. commercial	**(168)**	(115)
Commercial real estate	**(275)**	(31)
Commercial lease financing	**(69)**	(26)
Total commercial charge-offs	**(1,675)**	(822)
Total loans and leases charged off	**(5,419)**	(5,646)
Recoveries of loans and leases previously charged off		
Residential mortgage	**70**	140
Home equity	**131**	787
Credit card	**618**	587
Direct/Indirect consumer	**250**	309
Other consumer	**23**	15
Total consumer recoveries	**1,092**	1,838
U.S. commercial [2]	**178**	122
Non-U.S. commercial	**13**	31
Commercial real estate	**5**	2
Commercial lease financing	**10**	5
Total commercial recoveries	**206**	160
Total recoveries of loans and leases previously charged off	**1,298**	1,998
Net charge-offs	**(4,121)**	(3,648)
Provision for loan and lease losses	**10,565**	3,574
Other	**—**	(111)
Allowance for loan and lease losses, December 31	**18,802**	9,416
Reserve for unfunded lending commitments, January 1	**1,123**	797
Provision for unfunded lending commitments	**755**	16
Reserve for unfunded lending commitments, December 31	**1,878**	813
Allowance for credit losses, December 31	**$ 20,680**	$ 10,229
Loan and allowance ratios:		
Loans and leases outstanding at December 31 [3]	**$ 921,180**	$ 975,091
Allowance for loan and lease losses as a percentage of total loans and leases outstanding at December 31 [3]	**2.04 %**	0.97 %
Consumer allowance for loan and lease losses as a percentage of total consumer loans and leases outstanding at December 31 [4]	**2.35**	0.98
Commercial allowance for loan and lease losses as a percentage of total commercial loans and leases outstanding at December 31 [5]	**1.77**	0.96
Average loans and leases outstanding [3]	**$ 974,281**	$ 951,583
Annualized net charge-offs as a percentage of average loans and leases outstanding [3]	**0.42 %**	0.38 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases at December 31	**380**	265
Ratio of the allowance for loan and lease losses at December 31 to net charge-offs	**4.56**	2.58
Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 [6]	**$ 9,854**	$ 4,151
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 [6]	**181 %**	148 %

(1) Includes U.S. small business commercial charge-offs of $321 million in 2020 compared to $320 million in 2019.
(2) Includes U.S. small business commercial recoveries of $54 million in 2020 compared to $48 million in 2019.
(3) Outstanding loan and lease balances and ratios do not include loans accounted for under the fair value option of $6.7 billion and $8.3 billion at December 31, 2020 and 2019. Average loans accounted for under the fair value option were $8.2 billion in 2020 compared to $6.8 billion in 2019.
(4) Excludes consumer loans accounted for under the fair value option of $735 million and $594 million at December 31, 2020 and 2019.
(5) Excludes commercial loans accounted for under the fair value option of $5.9 billion and $7.7 billion at December 31, 2020 and 2019.
(6) Primarily includes amounts related to credit card and unsecured consumer lending portfolios in *Consumer Banking*.

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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 105.

We have been affected, and expect to continue to be affected, by market stress resulting from the pandemic that began in the first quarter of 2020. For more information on the effects of the pandemic, see Executive Summary – Recent Developments – COVID-19 Pandemic on page 48.

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.

Global Risk Management 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 (EMRC), 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 107.

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

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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 73.

Global Risk Management 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 44 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 44 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

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trading activities as presented in Table 44 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 44 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 44 presents year-end, average, high and low daily trading VaR for 2020 and 2019 using a 99 percent confidence level. The amounts disclosed in Table 44 and Table 45 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 2020 compared to 2019 primarily due to the impact of market volatility related to the pandemic in the VaR look back period.

Table 44 Market Risk VaR for Trading Activities

	2020				2019			
(Dollars in millions)	Year End	Average	High [1]	Low [1]	Year End	Average	High [1]	Low [1]
Foreign exchange	$ 8	$ 7	$ 25	$ 2	$ 4	$ 6	$ 13	$ 2
Interest rate	30	19	39	7	25	24	49	14
Credit	79	58	91	25	26	23	32	16
Equity	20	24	162	12	29	22	33	14
Commodities	4	6	12	3	4	6	31	4
Portfolio diversification	(72)	(61)	—	—	(47)	(49)	—	—
Total covered positions portfolio	69	53	171	27	41	32	47	24
Impact from less liquid exposures	52	27	—	—	—	3	—	—
Total covered positions and less liquid trading positions portfolio	121	80	169	30	41	35	53	27
Fair value option loans	52	52	84	7	8	10	13	7
Fair value option hedges	11	13	17	9	10	10	17	4
Fair value option portfolio diversification	(17)	(24)	—	—	(9)	(10)	—	—
Total fair value option portfolio	46	41	86	9	9	10	16	5
Portfolio diversification	(4)	(15)	—	—	(5)	(7)	—	—
Total market-based portfolio	$ 163	$ 106	171	32	$ 45	$ 38	56	28

[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.

The graph below presents the daily covered positions and less liquid trading positions portfolio VaR for 2020, corresponding to the data in Table 44. Peak VaR in mid-March 2020 was driven by increased market realized volatility and higher implied volatilities.



Additional VaR statistics produced within our single VaR model are provided in Table 45 at the same level of detail as in Table 44. 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 45 presents average trading VaR statistics at 99 percent and 95 percent confidence levels for 2020 and 2019. The increase in VaR for the 99 percent confidence level for 2020 was primarily due to COVID-19 related market volatility, which impacted the 99 percent VaR average more severely than the 95 percent VaR average.

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Table 45 Average Market Risk VaR for Trading Activities – 99 percent and 95 percent VaR Statistics

(Dollars in millions)	2020		2019	
	99 percent	95 percent	99 percent	95 percent
Foreign exchange	$ 7	$ 4	$ 6	$ 3
Interest rate	19	9	24	15
Credit	58	18	23	15
Equity	24	13	22	11
Commodities	6	3	6	3
Portfolio diversification	(61)	(26)	(49)	(29)
Total covered positions portfolio	53	21	32	18
Impact from less liquid exposures	27	2	3	2
Total covered positions and less liquid trading positions portfolio	80	23	35	20
Fair value option loans	52	13	10	5
Fair value option hedges	13	7	10	6
Fair value option portfolio diversification	(24)	(8)	(10)	(5)
Total fair value option portfolio	41	12	10	6
Portfolio diversification	(15)	(6)	(7)	(5)
Total market-based portfolio	$ 106	$ 29	$ 38	$ 21

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 ensure 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 2020, there were seven days 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 2020 and 2019. During 2020, positive trading-related revenue was recorded for 98 percent of the trading days, of which 87 percent were daily trading gains of over $25 million, and the largest loss was $90 million. This compares to 2019 where positive trading-related revenue was recorded for 98 percent of the trading days, of which 80 percent were daily trading gains of over $25 million, and the largest loss was $35 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

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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 70.

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 direction of interest rate movements as implied by the market-based forward curve.

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 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 46 presents the spot and 12-month forward rates used in our baseline forecasts at December 31, 2020 and 2019.

Table 46 Forward Rates

	December 31, 2020		
	Federal Funds	Three-month LIBOR	10-Year Swap
Spot rates	**0.25 %**	**0.24 %**	**0.93 %**
12-month forward rates	**0.25**	**0.19**	**1.06**
	December 31, 2019		
Spot rates	1.75 %	1.91 %	1.90 %
12-month forward rates	1.50	1.62	1.92

Table 47 shows the pretax impact to forecasted net interest income over the next 12 months from December 31, 2020 and 2019 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 rates are floored at zero.

During 2020, the asset sensitivity of our balance sheet increased in both up-rate and down-rate scenarios primarily due to continued deposit growth invested in long-term securities. 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 impact the fair value of debt securities and, accordingly, for debt securities classified as AFS, may 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 is reduced over time by offsetting positive impacts to net interest income. For more information on Basel 3, see Capital Management – Regulatory Capital on page 74.

Table 47 Estimated Banking Book Net Interest Income Sensitivity to Curve Changes

(Dollars in millions)	Short Rate (bps)	Long Rate (bps)	December 31 2020	December 31 2019
Parallel Shifts				
+100 bps instantaneous shift	+100	+100	**$ 10,468**	$ 4,190
-25 bps instantaneous shift	-25	-25	**(2,766)**	(1,500)
Flatteners				
Short-end instantaneous change	+100	—	**6,321**	2,641
Long-end instantaneous change	—	-25	**(1,686)**	(653)
Steepeners				
Short-end instantaneous change	-25	—	**(1,084)**	(844)
Long-end instantaneous change	—	+100	**4,333**	1,561

The sensitivity analysis in Table 47 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 deposits 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 47 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 non-interest-bearing deposits with higher yielding deposits or market-based funding would reduce our benefit in those scenarios.

Interest Rate and Foreign Exchange Derivative Contracts

Interest rate and foreign exchange derivative contracts are utilized in our ALM activities and serve as an efficient tool to manage our interest rate and foreign exchange risk. We use derivatives to hedge the variability in cash flows or changes in fair value on our balance sheet due to interest rate and foreign exchange components. For more information on our hedging

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activities, see *Note 3 – Derivatives* to the Consolidated Financial Statements.

Our interest rate contracts are generally non-leveraged generic interest rate and foreign exchange basis swaps, options, futures and forwards. In addition, we use foreign exchange contracts, including cross-currency interest rate swaps, foreign currency futures contracts, foreign currency forward contracts and options to mitigate the foreign exchange risk associated with foreign currency-denominated assets and liabilities.

Changes to the composition of our derivatives portfolio during 2020 reflect actions taken for interest rate and foreign exchange rate risk management. The decisions to reposition our derivatives portfolio are based on the current assessment of economic and financial conditions including the interest rate and foreign currency environments, balance sheet composition and trends, and the relative mix of our cash and derivative positions.

We use interest rate derivative instruments to hedge the variability in the cash flows of our assets and liabilities and other forecasted transactions (collectively referred to as cash flow hedges). The net results on both open and terminated cash flow hedge derivative instruments recorded in accumulated OCI were a gain of $580 million and a loss of $496 million, on a pretax basis, at December 31, 2020 and 2019. These gains and losses are expected to be reclassified into earnings in the same period as the hedged cash flows affect earnings and will decrease income or increase expense on the respective hedged cash flows. Assuming no change in open cash flow derivative hedge positions and no changes in prices or interest rates beyond what is implied in forward yield curves at December 31, 2020, the after-tax net gains are expected to be reclassified into earnings as follows: a gain of $187 million within the next year, a gain of $358 million in years two through five, a loss of $59 million in years six through ten, with the remaining loss of $50 million thereafter. For more information on derivatives designated as cash flow hedges, see *Note 3 – Derivatives* to the Consolidated Financial Statements.

We hedge our net investment in non-U.S. operations determined to have functional currencies other than the U.S. dollar using forward foreign exchange contracts that typically settle in less than 180 days, cross-currency basis swaps and foreign exchange options. We recorded net after-tax losses on derivatives in accumulated OCI associated with net investment hedges which were offset by gains on our net investments in consolidated non-U.S. entities at December 31, 2020.

Table 48 presents derivatives utilized in our ALM activities and shows the notional amount, fair value, weighted-average receive-fixed and pay-fixed rates, expected maturity and average estimated durations of our open ALM derivatives at December 31, 2020 and 2019. These amounts do not include derivative hedges on our MSRs. During 2020, the fair value of receive-fixed interest rate swaps increased while pay-fixed interest swaps decreased, primarily driven by lower swap rates on hedges of U.S. dollar long-term debt.

Table 48 Asset and Liability Management Interest Rate and Foreign Exchange Contracts

	December 31, 2020								
		Expected Maturity							
(Dollars in millions, average estimated duration in years)	Fair Value	Total	2021	2022	2023	2024	2025	Thereafter	Average Estimated Duration
Receive-fixed interest rate swaps [1]	$ 14,885								8.08
Notional amount		$269,015	$ 11,050	$ 20,908	$ 30,654	$ 31,317	$ 32,898	$142,188	
Weighted-average fixed-rate		1.54 %	3.25 %	0.91 %	1.48 %	1.17 %	1.07 %	1.69 %	
Pay-fixed interest rate swaps [1]	(5,502)								6.52
Notional amount		$252,698	$ 7,562	$ 21,667	$ 24,671	$ 24,406	$ 32,052	$142,340	
Weighted-average fixed-rate		0.89 %	0.57 %	0.10 %	1.28 %	0.86 %	0.68 %	1.00 %	
Same-currency basis swaps [2]	(235)								
Notional amount		$223,659	$ 18,769	$ 12,245	$ 9,747	$ 22,737	$ 28,222	$131,939	
Foreign exchange basis swaps [1, 3, 4]	(1,014)								
Notional amount		112,465	27,424	16,038	8,066	3,819	4,446	52,672	
Foreign exchange contracts [1, 4, 5]	349								
Notional amount [6]		(42,490)	(69,299)	2,841	2,505	4,735	4,369	12,359	
Futures and forward rate contracts	47								
Notional amount		14,255	14,255	—	—	—	—	—	
Option products	—								
Notional amount		17	—	—	17	—	—	—	
Net ALM contracts	$ 8,530								

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Table 48 Asset and Liability Management Interest Rate and Foreign Exchange Contracts (continued)

(Dollars in millions, average estimated duration in years)	December 31, 2019								
		Expected Maturity							
	Fair Value	Total	2020	2021	2022	2023	2024	Thereafter	Average Estimated Duration
Receive-fixed interest rate swaps [1]	$ 12,370								6.47
Notional amount		$215,123	$16,347	$14,642	$21,616	$36,356	$21,257	$104,905	
Weighted-average fixed-rate		2.68 %	2.68 %	3.17 %	2.48 %	2.36 %	2.55 %	2.79 %	
Pay-fixed interest rate swaps [1]	(2,669)								6.99
Notional amount		$69,586	$ 4,344	$ 2,117	$ —	$13,993	$ 8,194	$40,938	
Weighted-average fixed-rate		2.36 %	2.16 %	2.15 %	— %	2.52 %	2.26 %	2.35 %	
Same-currency basis swaps [2]	(290)								
Notional amount		$152,160	$18,857	$18,590	$ 4,306	$ 2,017	$14,567	$93,823	
Foreign exchange basis swaps [1, 3, 4]	(1,258)								
Notional amount		113,529	23,639	24,215	14,611	7,111	3,521	40,432	
Foreign exchange contracts [1, 4, 5]	414								
Notional amount [6]		(53,106)	(79,315)	4,539	2,674	2,340	4,432	12,224	
Option products	—								
Notional amount		15	—	—	—	15	—	—	
Net ALM contracts	$ 8,567								

[1] Does not include basis adjustments on either fixed-rate debt issued by the Corporation or AFS debt securities, which are hedged using derivatives designated as fair value hedging instruments, that substantially offset the fair values of these derivatives.
[2] At December 31, 2020 and 2019, the notional amount of same-currency basis swaps included $223.7 billion and $152.2 billion in both foreign currency and U.S. dollar-denominated basis swaps in which both sides of the swap are in the same currency.
[3] Foreign exchange basis swaps consisted of cross-currency variable interest rate swaps used separately or in conjunction with receive-fixed interest rate swaps.
[4] Does not include foreign currency translation adjustments on certain non-U.S. debt issued by the Corporation that substantially offset the fair values of these derivatives.
[5] The notional amount of foreign exchange contracts of $(42.5) billion at December 31, 2020 was comprised of $34.2 billion in foreign currency-denominated and cross-currency receive-fixed swaps, $(74.3) billion in net foreign currency forward rate contracts, $(3.1) billion in foreign currency-denominated interest rate swaps and $711 million in net foreign currency futures contracts. Foreign exchange contracts of $(53.1) billion at December 31, 2019 were comprised of $29.0 billion in foreign currency-denominated and cross-currency receive-fixed swaps, $(82.4) billion in net foreign currency forward rate contracts, $(313) million in foreign currency-denominated interest rate swaps and $644 million in foreign currency futures contracts.
[6] Reflects the net of long and short positions. Amounts shown as negative reflect a net short position.

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 loans held-for-sale (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 2020, 2019 and 2018, we recorded gains of $321 million, $291 million and $244 million related to the change in fair value of the MSRs, IRLCs and LHFS, net of gains and losses on the hedge portfolio. 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).

Operational risk is the risk of loss resulting from inadequate or failed processes, people and systems or from external events. Operational risk may occur anywhere in the Corporation, including third-party business processes, and is not limited to operations functions. Effects may extend beyond financial losses and may result in reputational risk impacts. Operational risk includes legal risk. Additionally, operational risk 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 73.

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, 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.

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, determining and developing tests to be conducted by the Enterprise Independent Testing unit, and reporting on the state of the control environment. Enterprise Independent Testing, an independent testing function within IRM, works with Global Compliance and Operational Risk, the FLUs and control functions in the identification of testing needs and test design, and is accountable for test execution, reporting and analysis of results.

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Corporate Audit provides 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 in support of Global Compliance and Operational Risk's responsibilities for conducting independent oversight of our compliance and operational risk management activities. The Board provides oversight of compliance risk through its Audit Committee and the ERC, and operational risk through the ERC.

A key operational risk facing the Corporation is information security, which includes cybersecurity. Cybersecurity risk represents, among other things, exposure to failures or interruptions of service or breaches of security, including as a result of malicious technological attacks, that impact the confidentiality, availability or integrity of our, or third parties' (including their downstream service providers, the financial services industry and financial data aggregators) operations, systems or data, including sensitive corporate and customer information. The Corporation manages information security risk in accordance with internal policies which govern our comprehensive information security program designed to protect the Corporation by enabling preventative, detective and responsive measures to combat information and cybersecurity risks. The Board and the ERC provide cybersecurity and information security risk oversight for the Corporation, and our Global Information Security Team manages the day-to-day implementation of our information security program.

Reputational Risk Management

Reputational risk is the risk that negative perceptions of the Corporation's conduct or business practices may adversely impact its 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 in its businesses and risk management processes to mitigate reputational risks in a timely manner and through proactive monitoring and identification of potential reputational risk events. 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, and reputational risk reporting is provided regularly and directly to management and the ERC, which provides primary oversight of reputational risk. In addition, each FLU has a committee, which includes representatives from Compliance, Legal and Risk, that is responsible for the oversight of reputational risk. Such committees' oversight includes providing 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 transition to a low-carbon economy, which may entail extensive policy, legal, technology and market changes, and (2) 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 temperature increases and sea level rises. These changes and events can have broad impacts on operations, supply chains, distribution networks, customers, and markets and are otherwise referred to, respectively, as transition risk and physical risk. The financial impacts of transition risk can lead to and amplify credit risk. Physical risk can also lead to increased credit risk by diminishing borrowers' repayment capacity or collateral values.

As climate risk is interconnected with 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. A key element of how we manage climate risk is the Risk Identification process through which climate and other risks are identified across all FLUs and control functions, prioritized in our risk inventory and evaluated to determine estimated severity and likelihood of occurrence. Once identified, climate risks are assessed for potential impacts and incorporated into the design of macroeconomic scenarios to generate loss forecasts and assess how climate-related impacts could affect us and our clients.

Our governance framework establishes oversight of climate risk practices and strategies by the Board, supported by its Corporate Governance, ESG, and Sustainability Committee, the ERC and the Global Environmental, Social and Governance Committee, a management-level committee comprised of senior leaders across every major FLU and control function. The Climate Risk Steering Council oversees our climate risk management practices, shapes our approach to managing climate-related risks in line with our Risk Framework and meets monthly. In 2020, the climate risk management effort was bolstered through the appointment of a Global Climate Risk Executive who reports to the CRO, and establishment of a new division within our Global Risk organization to drive execution of the climate risk management program with the support of FLUs, Technology & Operations and Risk partners. For additional information about climate risk, see the Bank of America website (the content of which is not incorporated by reference into this Annual Report on Form 10-K).

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

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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

On January 1, 2020, the Corporation adopted the new accounting standard that requires the measurement of the allowance for credit losses, which includes the allowance for loan and lease losses and the reserve for unfunded lending commitments, to be based on management's best estimate of lifetime ECL inherent in the Corporation's relevant financial assets.

The Corporation's estimate of lifetime ECL includes the use of quantitative models that incorporate forward-looking macroeconomic scenarios that are applied over the contractual life of the loan portfolios, adjusted for expected prepayments and borrower-controlled extension options. 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 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 amount of 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 Corporation also includes qualitative reserves to cover losses that are expected but, in the Corporation's assessment, may not be adequately reflected in the economic assumptions described above. For example, factors 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 allowance for credit losses can also be impacted by unanticipated changes in asset quality of the portfolio, such as increases in risk rating downgrades in our commercial portfolio, deterioration in borrower delinquencies or credit scores in our credit card portfolio or increases in LTVs in our consumer real estate portfolio. In addition, while we have incorporated our estimated impact of COVID-19 into our allowance for credit losses, the ultimate impact of the pandemic is still unknown, including how long economic activities will be impacted and what effect the unprecedented levels of government fiscal and monetary actions will have on the economy and our credit losses.

As described above, the process to determine the allowance for credit losses requires numerous estimates and assumptions, some of which require a high degree of judgment and are often interrelated. Changes in the estimates and assumptions can result in significant changes in the allowance for credit losses. Our process for determining the allowance for credit losses is further 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.

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

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liabilities became unobservable or observable, respectively, in the current marketplace. For more information on transfers into and out of Level 3 during 2020, 2019 and 2018, 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 Item 1A. Risk Factors of our 2020 Annual Report on Form 10-K.

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, 2020. In performing that test, we compared the fair value of each reporting unit to its estimated carrying value as measured by allocated equity. We estimated the fair value of each reporting unit based on the income approach (which utilizes the present value of cash flows to estimate fair value) and the market multiplier approach (which utilizes observable market prices and metrics of peer companies to estimate fair value).

Our discounted cash flows were generally based on the Corporation's three-year internal forecasts with a long-term growth rate of 3.68 percent. Our estimated cash flows considered the current challenging global industry and market conditions related to the pandemic, including the low interest rate environment. The cash flows were discounted using rates that ranged from 9 percent to 12 percent, which were derived from a capital asset pricing model that incorporates the risk and uncertainty in the cash flow forecasts, the financial markets and industries similar to each of the reporting units.

Under the market multiplier approach, we estimated the fair value of the individual reporting units utilizing various market multiples, primarily various pricing multiples, from comparable publicly-traded companies in industries similar to the reporting unit and then factored in a control premium based upon observed comparable premiums paid for change-in-control transactions for financial institutions.

Based on the results of the test, we determined that each reporting unit's estimated fair value exceeded its respective carrying value and that the goodwill assigned to each reporting unit was not impaired. The fair values of the reporting units as a percentage of their carrying values ranged from 109 percent to 213 percent. It currently remains difficult to estimate the future economic impacts related to the pandemic. If economic and market conditions (both in the U.S. and internationally) deteriorate, our reporting units could be negatively impacted, which could change our key assumptions and related estimates and may result in a future impairment charge.

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.

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Non-GAAP Reconciliations

Tables 49 and 50 provide reconciliations of certain non-GAAP financial measures to GAAP financial measures.

Table 49 Five-year Reconciliations to GAAP Financial Measures [1]

(Dollars in millions, shares in thousands)	2020	2019	2018	2017	2016
Reconciliation of average shareholders' equity to average tangible shareholders' equity and average tangible common shareholders' equity					
Shareholders' equity	**$ 267,309**	$ 267,889	$ 264,748	$ 271,289	$ 265,843
Goodwill	**(68,951)**	(68,951)	(68,951)	(69,286)	(69,750)
Intangible assets (excluding MSRs)	**(1,862)**	(1,721)	(2,058)	(2,652)	(3,382)
Related deferred tax liabilities	**821**	773	906	1,463	1,644
Tangible shareholders' equity	**$ 197,317**	$ 197,990	$ 194,645	$ 200,814	$ 194,355
Preferred stock	**(23,624)**	(23,036)	(22,949)	(24,188)	(24,656)
Tangible common shareholders' equity	**$ 173,693**	$ 174,954	$ 171,696	$ 176,626	$ 169,699
Reconciliation of year-end shareholders' equity to year-end tangible shareholders' equity and year-end tangible common shareholders' equity					
Shareholders' equity	**$ 272,924**	$ 264,810	$ 265,325	$ 267,146	$ 266,195
Goodwill	**(68,951)**	(68,951)	(68,951)	(68,951)	(69,744)
Intangible assets (excluding MSRs)	**(2,151)**	(1,661)	(1,774)	(2,312)	(2,989)
Related deferred tax liabilities	**920**	713	858	943	1,545
Tangible shareholders' equity	**$ 202,742**	$ 194,911	$ 195,458	$ 196,826	$ 195,007
Preferred stock	**(24,510)**	(23,401)	(22,326)	(22,323)	(25,220)
Tangible common shareholders' equity	**$ 178,232**	$ 171,510	$ 173,132	$ 174,503	$ 169,787
Reconciliation of year-end assets to year-end tangible assets					
Assets	**$ 2,819,627**	$2,434,079	$2,354,507	$2,281,234	$2,188,067
Goodwill	**(68,951)**	(68,951)	(68,951)	(68,951)	(69,744)
Intangible assets (excluding MSRs)	**(2,151)**	(1,661)	(1,774)	(2,312)	(2,989)
Related deferred tax liabilities	**920**	713	858	943	1,545
Tangible assets	**$ 2,749,445**	$2,364,180	$2,284,640	$2,210,914	$2,116,879

[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 54.

Table 50 Quarterly Reconciliations to GAAP Financial Measures [1]

	2020 Quarters				2019 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	**$ 271,020**	$ 267,323	$ 266,316	$ 264,534	$ 266,900	$ 270,430	$ 267,975	$ 266,217
Goodwill	**(68,951)**	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,173)**	(1,976)	(1,640)	(1,655)	(1,678)	(1,707)	(1,736)	(1,763)
Related deferred tax liabilities	**910**	855	790	728	730	752	770	841
Tangible shareholders' equity	**$ 200,806**	$ 197,251	$ 196,515	$ 194,656	$ 197,001	$ 200,524	$ 198,058	$ 196,344
Preferred stock	**(24,180)**	(23,427)	(23,427)	(23,456)	(23,461)	(23,800)	(22,537)	(22,326)
Tangible common shareholders' equity	**$ 176,626**	$ 173,824	$ 173,088	$ 171,200	$ 173,540	$ 176,724	$ 175,521	$ 174,018
Reconciliation of period-end shareholders' equity to period-end tangible shareholders' equity and period-end tangible common shareholders' equity								
Shareholders' equity	**$ 272,924**	$ 268,850	$ 265,637	$ 264,918	$ 264,810	$ 268,387	$ 271,408	$ 267,010
Goodwill	**(68,951)**	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,151)**	(2,185)	(1,630)	(1,646)	(1,661)	(1,690)	(1,718)	(1,747)
Related deferred tax liabilities	**920**	910	789	790	713	734	756	773
Tangible shareholders' equity	**$ 202,742**	$ 198,624	$ 195,845	$ 195,111	$ 194,911	$ 198,480	$ 201,495	$ 197,085
Preferred stock	**(24,510)**	(23,427)	(23,427)	(23,427)	(23,401)	(23,606)	(24,689)	(22,326)
Tangible common shareholders' equity	**$ 178,232**	$ 175,197	$ 172,418	$ 171,684	$ 171,510	$ 174,874	$ 176,806	$ 174,759
Reconciliation of period-end assets to period-end tangible assets								
Assets	**$ 2,819,627**	$2,738,452	$2,741,688	$2,619,954	$2,434,079	$2,426,330	$2,395,892	$2,377,164
Goodwill	**(68,951)**	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)	(68,951)
Intangible assets (excluding MSRs)	**(2,151)**	(2,185)	(1,630)	(1,646)	(1,661)	(1,690)	(1,718)	(1,747)
Related deferred tax liabilities	**920**	910	789	790	713	734	756	773
Tangible assets	**$ 2,749,445**	$2,668,226	$2,671,896	$2,550,147	$2,364,180	$2,356,423	$2,325,979	$2,307,239

[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 54.

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Table I Outstanding Loans and Leases

	December 31				
(Dollars in millions)	**2020**	2019	2018	2017	2016
Consumer					
Residential mortgage	**$ 223,555**	$ 236,169	$ 208,557	$ 203,811	$ 191,797
Home equity	**34,311**	40,208	48,286	57,744	66,443
Credit card	**78,708**	97,608	98,338	96,285	92,278
Non-U.S. credit card	**—**	—	—	—	9,214
Direct/Indirect consumer [1]	**91,363**	90,998	91,166	96,342	95,962
Other consumer [2]	**124**	192	202	166	626
Total consumer loans excluding loans accounted for under the fair value option	**428,061**	465,175	446,549	454,348	456,320
Consumer loans accounted for under the fair value option [3]	**735**	594	682	928	1,051
Total consumer	**428,796**	465,769	447,231	455,276	457,371
Commercial					
U.S. commercial	**288,728**	307,048	299,277	284,836	270,372
Non-U.S. commercial	**90,460**	104,966	98,776	97,792	89,397
Commercial real estate [4]	**60,364**	62,689	60,845	58,298	57,355
Commercial lease financing	**17,098**	19,880	22,534	22,116	22,375
	456,650	494,583	481,432	463,042	439,499
U.S. small business commercial [5]	**36,469**	15,333	14,565	13,649	12,993
Total commercial loans excluding loans accounted for under the fair value option	**493,119**	509,916	495,997	476,691	452,492
Commercial loans accounted for under the fair value option [3]	**5,946**	7,741	3,667	4,782	6,034
Total commercial	**499,065**	517,657	499,664	481,473	458,526
Less: Loans of business held for sale [6]	**—**	—	—	—	(9,214)
Total loans and leases	**$ 927,861**	$ 983,426	$ 946,895	$ 936,749	$ 906,683

(1) Includes primarily auto and specialty lending loans and leases of $46.4 billion, $50.4 billion, $50.1 billion, $52.4 billion and $50.7 billion, U.S. securities-based lending loans of $41.1 billion, $36.7 billion, $37.0 billion, $39.8 billion and $40.1 billion and non-U.S. consumer loans of $3.0 billion, $2.8 billion, $2.9 billion, $3.0 billion and $3.0 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

(2) Substantially all of other consumer at December 31, 2020, 2019, 2018 and 2017 is consumer overdrafts. Other consumer at December 31, 2016 also includes consumer finance loans of $465 million.

(3) Consumer loans accounted for under the fair value option include residential mortgage loans of $298 million, $257 million, $336 million, $567 million and $710 million, and home equity loans of $437 million, $337 million, $346 million, $361 million and $341 million at December 31, 2020, 2019, 2018, 2017 and 2016, respectively. Commercial loans accounted for under the fair value option include U.S. commercial loans of $2.9 billion, $4.7 billion, $2.5 billion, $2.6 billion and $2.9 billion, and non-U.S. commercial loans of $3.0 billion, $3.1 billion, $1.1 billion, $2.2 billion and $3.1 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

(4) Includes U.S. commercial real estate loans of $57.2 billion, $59.0 billion, $56.6 billion, $54.8 billion and $54.3 billion, and non-U.S. commercial real estate loans of $3.2 billion, $3.7 billion, $4.2 billion, $3.5 billion and $3.1 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

(5) Includes card-related products.

(6) Represents non-U.S. credit card loans, which were included in assets of business held for sale on the Consolidated Balance Sheet.

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Table II Nonperforming Loans, Leases and Foreclosed Properties [1]

(Dollars in millions)	December 31 2020	2019	2018	2017	2016
Consumer					
Residential mortgage	**$ 2,005**	$ 1,470	$ 1,893	$ 2,476	$ 3,056
Home equity	**649**	536	1,893	2,644	2,918
Direct/Indirect consumer	**71**	47	56	46	28
Other consumer	**—**	—	—	—	2
Total consumer [2]	**2,725**	2,053	3,842	5,166	6,004
Commercial					
U.S. commercial	**1,243**	1,094	794	814	1,256
Non-U.S. commercial	**418**	43	80	299	279
Commercial real estate	**404**	280	156	112	72
Commercial lease financing	**87**	32	18	24	36
	2,152	1,449	1,048	1,249	1,643
U.S. small business commercial	**75**	50	54	55	60
Total commercial [3]	**2,227**	1,499	1,102	1,304	1,703
Total nonperforming loans and leases	**4,952**	3,552	4,944	6,470	7,707
Foreclosed properties	**164**	285	300	288	377
Total nonperforming loans, leases and foreclosed properties	**$ 5,116**	$ 3,837	$ 5,244	$ 6,758	$ 8,084

[1] Balances exclude foreclosed properties insured by certain government-guaranteed loans, principally FHA-insured loans, that entered foreclosure of $119 million, $260 million, $488 million, $801 million and $1.2 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

[2] In 2020, $372 million in interest income was estimated to be contractually due on $2.7 billion of consumer loans and leases classified as nonperforming at December 31, 2020, as presented in the table above, plus $4.4 billion of TDRs classified as performing at December 31, 2020. Approximately $254 million of the estimated $372 million in contractual interest was received and included in interest income for 2020.

[3] In 2020, $115 million in interest income was estimated to be contractually due on $2.2 billion of commercial loans and leases classified as nonperforming at December 31, 2020, as presented in the table above, plus $1.0 billion of TDRs classified as performing at December 31, 2020. Approximately $71 million of the estimated $115 million in contractual interest was received and included in interest income for 2020.

Table III Accruing Loans and Leases Past Due 90 Days or More [1]

(Dollars in millions)	December 31 2020	2019	2018	2017	2016
Consumer					
Residential mortgage [2]	**$ 762**	$ 1,088	$ 1,884	$ 3,230	$ 4,793
Credit card	**903**	1,042	994	900	782
Non-U.S. credit card	**—**	—	—	—	66
Direct/Indirect consumer	**33**	33	38	40	34
Other consumer	**—**	—	—	—	4
Total consumer	**1,698**	2,163	2,916	4,170	5,679
Commercial					
U.S. commercial	**228**	106	197	144	106
Non-U.S. commercial	**10**	8	—	3	5
Commercial real estate	**6**	19	4	4	7
Commercial lease financing	**25**	20	29	19	19
	269	153	230	170	137
U.S. small business commercial	**115**	97	84	75	71
Total commercial	**384**	250	314	245	208
Total accruing loans and leases past due 90 days or more	**$ 2,082**	$ 2,413	$ 3,230	$ 4,415	$ 5,887

[1] Our policy is to classify consumer real estate-secured loans as nonperforming at 90 days past due, except for the fully-insured loan portfolio and loans accounted for under the fair value option.

[2] Balances are fully-insured loans.

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Table IV Selected Loan Maturity Data [1, 2]

(Dollars in millions)	December 31, 2020 Due in One Year or Less	Due After One Year Through Five Years	Due After Five Years	Total
U.S. commercial	$ 82,577	$ 198,898	$ 46,642	**$ 328,117**
U.S. commercial real estate	14,073	37,552	5,552	**57,177**
Non-U.S. and other [3]	33,196	54,488	8,989	**96,673**
Total selected loans	**$ 129,846**	**$ 290,938**	**$ 61,183**	**$ 481,967**
Percent of total	27 %	60 %	13 %	**100 %**
Sensitivity of selected loans to changes in interest rates for loans due after one year:				
Fixed interest rates		$ 46,911	$ 32,280	
Floating or adjustable interest rates		244,027	28,903	
Total		**$ 290,938**	**$ 61,183**	

(1) Loan maturities are based on the remaining maturities under contractual terms.
(2) Includes loans accounted for under the fair value option.
(3) Loan maturities include non-U.S. commercial and commercial real estate loans.

Table V Allowance for Credit Losses [1]

(Dollars in millions)	2020	2019	2018	2017	2016
Allowance for loan and lease losses, January 1	**$ 12,358**	$ 9,601	$ 10,393	$ 11,237	$ 12,234
Loans and leases charged off					
Residential mortgage	**(40)**	(93)	(207)	(188)	(403)
Home equity	**(58)**	(429)	(483)	(582)	(752)
Credit card	**(2,967)**	(3,535)	(3,345)	(2,968)	(2,691)
Non-U.S. credit card [2]	**—**	—	—	(103)	(238)
Direct/Indirect consumer	**(372)**	(518)	(495)	(491)	(392)
Other consumer	**(307)**	(249)	(197)	(212)	(232)
Total consumer charge-offs	**(3,744)**	(4,824)	(4,727)	(4,544)	(4,708)
U.S. commercial [3]	**(1,163)**	(650)	(575)	(589)	(567)
Non-U.S. commercial	**(168)**	(115)	(82)	(446)	(133)
Commercial real estate	**(275)**	(31)	(10)	(24)	(10)
Commercial lease financing	**(69)**	(26)	(8)	(16)	(30)
Total commercial charge-offs	**(1,675)**	(822)	(675)	(1,075)	(740)
Total loans and leases charged off	**(5,419)**	(5,646)	(5,402)	(5,619)	(5,448)
Recoveries of loans and leases previously charged off					
Residential mortgage	**70**	140	179	288	272
Home equity	**131**	787	485	369	347
Credit card	**618**	587	508	455	422
Non-U.S. credit card [2]	**—**	—	—	28	63
Direct/Indirect consumer	**250**	309	300	277	258
Other consumer	**23**	15	15	49	27
Total consumer recoveries	**1,092**	1,838	1,487	1,466	1,389
U.S. commercial [4]	**178**	122	120	142	175
Non-U.S. commercial	**13**	31	14	6	13
Commercial real estate	**5**	2	9	15	41
Commercial lease financing	**10**	5	9	11	9
Total commercial recoveries	**206**	160	152	174	238
Total recoveries of loans and leases previously charged off	**1,298**	1,998	1,639	1,640	1,627
Net charge-offs	**(4,121)**	(3,648)	(3,763)	(3,979)	(3,821)
Provision for loan and lease losses	**10,565**	3,574	3,262	3,381	3,581
Other [5]	**—**	(111)	(291)	(246)	(514)
Total allowance for loan and lease losses, December 31	**18,802**	9,416	9,601	10,393	11,480
Less: Allowance included in assets of business held for sale [6]	**—**	—	—	—	(243)
Allowance for loan and lease losses, December 31	**18,802**	9,416	9,601	10,393	11,237
Reserve for unfunded lending commitments, January 1	**1,123**	797	777	762	646
Provision for unfunded lending commitments	**755**	16	20	15	16
Other [5]	**—**	—	—	—	100
Reserve for unfunded lending commitments, December 31	**1,878**	813	797	777	762
Allowance for credit losses, December 31	**$ 20,680**	$ 10,229	$ 10,398	$ 11,170	$ 11,999

(1) On January 1, 2020, the Corporation adopted the CECL accounting standard, which increased the allowance for loan and lease losses by $2.9 billion and the reserve for unfunded lending commitments by $310 million. For more information, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.
(2) Represents amounts related to the non-U.S. credit card loan portfolio, which was sold in 2017.
(3) Includes U.S. small business commercial charge-offs of $321 million, $320 million, $287 million, $258 million and $253 million in 2020, 2019, 2018, 2017 and 2016, respectively.
(4) Includes U.S. small business commercial recoveries of $54 million, $48 million, $47 million, $43 million and $45 million in 2020, 2019, 2018, 2017 and 2016, respectively.
(5) Primarily represents write-offs of purchased credit-impaired loans for years prior to 2020, the net impact of portfolio sales, consolidations and deconsolidations, foreign currency translation adjustments, transfers to held for sale and certain other reclassifications.
(6) Represents allowance related to the non-U.S. credit card loan portfolio, which was sold in 2017.

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Table V Allowance for Credit Losses (continued)

(Dollars in millions)	2020	2019	2018	2017	2016
Loan and allowance ratios [7]:					
Loans and leases outstanding at December 31 [8]	**$921,180**	$975,091	$942,546	$931,039	$908,812
Allowance for loan and lease losses as a percentage of total loans and leases outstanding at December 31 [8]	**2.04 %**	0.97 %	1.02 %	1.12 %	1.26 %
Consumer allowance for loan and lease losses as a percentage of total consumer loans and leases outstanding at December 31 [9]	**2.35**	0.98	1.08	1.18	1.36
Commercial allowance for loan and lease losses as a percentage of total commercial loans and leases outstanding at December 31 [10]	**1.77**	0.96	0.97	1.05	1.16
Average loans and leases outstanding [8]	**$974,281**	$951,583	$927,531	$911,988	$892,255
Net charge-offs as a percentage of average loans and leases outstanding [8]	**0.42 %**	0.38 %	0.41 %	0.44 %	0.43 %
Allowance for loan and lease losses as a percentage of total nonperforming loans and leases at December 31	**380**	265	194	161	149
Ratio of the allowance for loan and lease losses at December 31 to net charge-offs	**4.56**	2.58	2.55	2.61	3.00
Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 [11]	**$ 9,854**	$ 4,151	$ 4,031	$ 3,971	$ 3,951
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 [11]	**181 %**	148 %	113 %	99 %	98 %

[7] Loan and allowance ratios for 2016 include $243 million of non-U.S. credit card allowance for loan and lease losses and $9.2 billion of ending non-U.S. credit card loans, which were sold in 2017.

[8] Outstanding loan and lease balances and ratios do not include loans accounted for under the fair value option of $6.7 billion, $8.3 billion, $4.3 billion, $5.7 billion and $7.1 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively. Average loans accounted for under the fair value option were $8.2 billion, $6.8 billion, $5.5 billion, $6.7 billion and $8.2 billion in 2020, 2019, 2018, 2017 and 2016, respectively.

[9] Excludes consumer loans accounted for under the fair value option of $735 million, $594 million, $682 million, $928 million and $1.1 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

[10] Excludes commercial loans accounted for under the fair value option of $5.9 billion, $7.7 billion, $3.7 billion, $4.8 billion and $6.0 billion at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

[11] Primarily includes amounts related to credit card and unsecured consumer lending portfolios in *Consumer Banking* and, in 2017 and 2016, the non-U.S. credit card portfolio in *All Other*.

Table VI Allocation of the Allowance for Credit Losses by Product Type [1]

	December 31									
	2020		2019		2018		2017		2016	
(Dollars in millions)	Amount	Percent of Total	Amount	Percent of Total	Amount	Percent of Total	Amount	Percent of Total	Amount	Percent of Total
Allowance for loan and lease losses										
Residential mortgage	**$ 459**	**2.44 %**	$ 325	3.45 %	$ 422	4.40 %	$ 701	6.74 %	$ 1,012	8.82 %
Home equity	**399**	**2.12**	221	2.35	506	5.27	1,019	9.80	1,738	15.14
Credit card	**8,420**	**44.79**	3,710	39.39	3,597	37.47	3,368	32.41	2,934	25.56
Non-U.S. credit card	**—**	**—**	—	—	—	—	—	—	243	2.12
Direct/Indirect consumer	**752**	**4.00**	234	2.49	248	2.58	264	2.54	244	2.13
Other consumer	**41**	**0.22**	52	0.55	29	0.30	31	0.30	51	0.44
Total consumer	**10,071**	**53.57**	4,542	48.23	4,802	50.02	5,383	51.79	6,222	54.21
U.S. commercial [2]	**5,043**	**26.82**	3,015	32.02	3,010	31.35	3,113	29.95	3,326	28.97
Non-U.S. commercial	**1,241**	**6.60**	658	6.99	677	7.05	803	7.73	874	7.61
Commercial real estate	**2,285**	**12.15**	1,042	11.07	958	9.98	935	9.00	920	8.01
Commercial lease financing	**162**	**0.86**	159	1.69	154	1.60	159	1.53	138	1.20
Total commercial	**8,731**	**46.43**	4,874	51.77	4,799	49.98	5,010	48.21	5,258	45.79
Total allowance for loan and lease losses	**18,802**	**100.00 %**	9,416	100.00 %	9,601	100.00 %	10,393	100.00 %	11,480	100.00 %
Less: Allowance included in assets of business held for sale [3]	**—**		—		—		—		(243)	
Allowance for loan and lease losses	**18,802**		9,416		9,601		10,393		11,237	
Reserve for unfunded lending commitments	**1,878**		813		797		777		762	
Allowance for credit losses	**$ 20,680**		$ 10,229		$ 10,398		$ 11,170		$ 11,999	

[1] On January 1, 2020, the Corporation adopted the CECL accounting standard. For more information, see *Note 1 – Summary of Significant Accounting Principles* to the Consolidated Financial Statements.

[2] Includes allowance for loan and lease losses for U.S. small business commercial loans of $1.5 billion, $523 million, $474 million, $439 million and $416 million at December 31, 2020, 2019, 2018, 2017 and 2016, respectively.

[3] Represents allowance for loan and lease losses related to the non-U.S. credit card loan portfolio, which was sold in 2017.

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Report of Management on Internal Control Over Financial Reporting

Bank of America Corporation and Subsidiaries

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, 2020 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, 2020, the Corporation's internal control over financial reporting is effective.

The Corporation's internal control over financial reporting as of December 31, 2020 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, 2020.



Brian T. Moynihan
Chairman, Chief Executive Officer and President



Paul M. Donofrio
Chief Financial Officer

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Report of Independent Registered Public Accounting Firm

Bank of America Corporation and Subsidiaries

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, 2020 and 2019, 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, 2020, 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, 2020, 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, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 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, 2020, 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, 2020, the allowance for loan and lease losses was $18.8 billion on total loans and leases of

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$921.2 billion, which excludes loans accounted for under the fair value option. For commercial and consumer card loans, the expected credit loss is 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 amount of 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 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 to assist in evaluating certain audit evidence.

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 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 economic forecast scenarios used in the loss forecast models, (iv) testing the completeness and accuracy of data used in the estimate, and (v) evaluating certain qualitative reserves made to the model output results to determine the overall allowance for loan 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 $10.0 billion of assets and $7.4 billion of liabilities classified as Level 3 fair value measurements on a recurring basis and $1.7 billion of assets classified as Level 3 fair value measurements 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 price, may be determined using quantitative-based extrapolations 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 and effort in performing procedures, including the involvement of professionals with specialized skill and knowledge to assist in evaluating certain audit evidence.

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 assumptions used to develop the significant unobservable inputs.



Charlotte, North Carolina
February 24, 2021

We have served as the Corporation's auditor since 1958.

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Consolidated Statement of Income

(In millions, except per share information)	2020	2019	2018
Net interest income			
Interest income	**$ 51,585**	$ 71,236	$ 66,769
Interest expense	**8,225**	22,345	18,607
Net interest income	**43,360**	48,891	48,162
Noninterest income			
Fees and commissions	**34,551**	33,015	33,078
Market making and similar activities	**8,355**	9,034	9,008
Other income	**(738)**	304	772
Total noninterest income	**42,168**	42,353	42,858
Total revenue, net of interest expense	**85,528**	91,244	91,020
Provision for credit losses	**11,320**	3,590	3,282
Noninterest expense			
Compensation and benefits	**32,725**	31,977	31,880
Occupancy and equipment	**7,141**	6,588	6,380
Information processing and communications	**5,222**	4,646	4,555
Product delivery and transaction related	**3,433**	2,762	2,857
Marketing	**1,701**	1,934	1,674
Professional fees	**1,694**	1,597	1,699
Other general operating	**3,297**	5,396	4,109
Total noninterest expense	**55,213**	54,900	53,154
Income before income taxes	**18,995**	32,754	34,584
Income tax expense	**1,101**	5,324	6,437
Net income	**$ 17,894**	$ 27,430	$ 28,147
Preferred stock dividends	**1,421**	1,432	1,451
Net income applicable to common shareholders	**$ 16,473**	$ 25,998	$ 26,696
Per common share information			
Earnings	**$ 1.88**	$ 2.77	$ 2.64
Diluted earnings	**1.87**	2.75	2.61
Average common shares issued and outstanding	**8,753.2**	9,390.5	10,096.5
Average diluted common shares issued and outstanding	**8,796.9**	9,442.9	10,236.9

Consolidated Statement of Comprehensive Income

(Dollars in millions)	2020	2019	2018
Net income	**$ 17,894**	$ 27,430	$ 28,147
Other comprehensive income (loss), net-of-tax:			
Net change in debt securities	**4,799**	5,875	(3,953)
Net change in debit valuation adjustments	**(498)**	(963)	749
Net change in derivatives	**826**	616	(53)
Employee benefit plan adjustments	**(98)**	136	(405)
Net change in foreign currency translation adjustments	**(52)**	(86)	(254)
Other comprehensive income (loss)	**4,977**	5,578	(3,916)
Comprehensive income	**$ 22,871**	$ 33,008	$ 24,231

See accompanying Notes to Consolidated Financial Statements.

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Consolidated Balance Sheet

(Dollars in millions)	December 31 2020	2019
Assets		
Cash and due from banks	$ **36,430**	$ 30,152
Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks	**344,033**	131,408
Cash and cash equivalents	**380,463**	161,560
Time deposits placed and other short-term investments	**6,546**	7,107
Federal funds sold and securities borrowed or purchased under agreements to resell (includes **$108,856** and $50,364 measured at fair value)	**304,058**	274,597
Trading account assets (includes **$91,510** and $90,946 pledged as collateral)	**198,854**	229,826
Derivative assets	**47,179**	40,485
Debt securities:		
Carried at fair value	**246,601**	256,467
Held-to-maturity, at cost (fair value – **$448,180** and $219,821)	**438,249**	215,730
Total debt securities	**684,850**	472,197
Loans and leases (includes **$6,681** and $8,335 measured at fair value)	**927,861**	983,426
Allowance for loan and lease losses	**(18,802)**	(9,416)
Loans and leases, net of allowance	**909,059**	974,010
Premises and equipment, net	**11,000**	10,561
Goodwill	**68,951**	68,951
Loans held-for-sale (includes **$1,585** and $3,709 measured at fair value)	**9,243**	9,158
Customer and other receivables	**64,221**	55,937
Other assets (includes **$15,718** and $15,518 measured at fair value)	**135,203**	129,690
Total assets	$ **2,819,627**	$ 2,434,079
Liabilities		
Deposits in U.S. offices:		
Noninterest-bearing	$ **650,674**	$ 403,305
Interest-bearing (includes **$481** and $508 measured at fair value)	**1,038,341**	940,731
Deposits in non-U.S. offices:		
Noninterest-bearing	**17,698**	13,719
Interest-bearing	**88,767**	77,048
Total deposits	**1,795,480**	1,434,803
Federal funds purchased and securities loaned or sold under agreements to repurchase (includes **$135,391** and $16,008 measured at fair value)	**170,323**	165,109
Trading account liabilities	**71,320**	83,270
Derivative liabilities	**45,526**	38,229
Short-term borrowings (includes **$5,874** and $3,941 measured at fair value)	**19,321**	24,204
Accrued expenses and other liabilities (includes **$16,311** and $15,434 measured at fair value and **$1,878** and $813 of reserve for unfunded lending commitments)	**181,799**	182,798
Long-term debt (includes **$32,200** and $34,975 measured at fair value)	**262,934**	240,856
Total liabilities	**2,546,703**	2,169,269
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 – **3,931,440** and 3,887,440 shares	**24,510**	23,401
Common stock and additional paid-in capital, $0.01 par value; authorized – **12,800,000,000** shares; issued and outstanding – **8,650,814,105** and 8,836,148,954 shares	**85,982**	91,723
Retained earnings	**164,088**	156,319
Accumulated other comprehensive income (loss)	**(1,656)**	(6,633)
Total shareholders' equity	**272,924**	264,810
Total liabilities and shareholders' equity	$ **2,819,627**	$ 2,434,079
Assets of consolidated variable interest entities included in total assets above (isolated to settle the liabilities of the variable interest entities)		
Trading account assets	$ **5,225**	$ 5,811
Loans and leases	**23,636**	38,837
Allowance for loan and lease losses	**(1,693)**	(807)
Loans and leases, net of allowance	**21,943**	38,030
All other assets	**1,387**	540
Total assets of consolidated variable interest entities	$ **28,555**	$ 44,381
Liabilities of consolidated variable interest entities included in total liabilities above		
Short-term borrowings (includes **$22** and $0 of non-recourse short-term borrowings)	$ **454**	$ 2,175
Long-term debt (includes **$7,053** and $8,717 of non-recourse debt)	**7,053**	8,718
All other liabilities (includes **$16** and $19 of non-recourse liabilities)	**16**	22
Total liabilities of consolidated variable interest entities	$ **7,523**	$ 10,915

See accompanying Notes to Consolidated Financial Statements.

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Bank of America Corporation and Subsidiaries

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, 2017	$ 22,323	10,287.3	$ 138,089	$ 113,816	$ (7,082)	$ 267,146
Cumulative adjustment for adoption of hedge accounting standard				(32)	57	25
Adoption of accounting standard related to certain tax effects stranded in accumulated other comprehensive income (loss)				1,270	(1,270)	—
Net income				28,147		28,147
Net change in debt securities					(3,953)	(3,953)
Net change in debit valuation adjustments					749	749
Net change in derivatives					(53)	(53)
Employee benefit plan adjustments					(405)	(405)
Net change in foreign currency translation adjustments					(254)	(254)
Dividends declared:						
Common				(5,424)		(5,424)
Preferred				(1,451)		(1,451)
Issuance of preferred stock	4,515					4,515
Redemption of preferred stock	(4,512)					(4,512)
Common stock issued under employee plans, net, and other		58.2	901	(12)		889
Common stock repurchased		(676.2)	(20,094)			(20,094)
Balance, December 31, 2018	$ 22,326	9,669.3	$ 118,896	$ 136,314	$ (12,211)	$ 265,325
Cumulative adjustment for adoption of lease accounting standard				165		165
Net income				27,430		27,430
Net change in debt securities					5,875	5,875
Net change in debit valuation adjustments					(963)	(963)
Net change in derivatives					616	616
Employee benefit plan adjustments					136	136
Net change in foreign currency translation adjustments					(86)	(86)
Dividends declared:						
Common				(6,146)		(6,146)
Preferred				(1,432)		(1,432)
Issuance of preferred stock	3,643					3,643
Redemption of preferred stock	(2,568)					(2,568)
Common stock issued under employee plans, net, and other		123.3	971	(12)		959
Common stock repurchased		(956.5)	(28,144)			(28,144)
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

See accompanying Notes to Consolidated Financial Statements.

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Bank of America Corporation and Subsidiaries

Consolidated Statement of Cash Flows

(Dollars in millions)	2020	2019	2018
Operating activities			
Net income	**$ 17,894**	$ 27,430	$ 28,147
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	**11,320**	3,590	3,282
Gains on sales of debt securities	**(411)**	(217)	(154)
Depreciation and amortization	**1,843**	1,729	2,063
Net amortization of premium/discount on debt securities	**4,101**	2,066	1,824
Deferred income taxes	**(1,737)**	2,435	3,041
Stock-based compensation	**2,031**	1,974	1,729
Impairment of equity method investment	**—**	2,072	—
Loans held-for-sale:			
Originations and purchases	**(19,657)**	(28,874)	(28,071)
Proceeds from sales and paydowns of loans originally classified as held for sale and instruments from related securitization activities	**19,049**	30,191	28,972
Net change in:			
Trading and derivative assets/liabilities	**16,942**	7,920	(23,673)
Other assets	**(12,883)**	(11,113)	11,920
Accrued expenses and other liabilities	**(4,385)**	16,363	13,010
Other operating activities, net	**3,886**	6,211	(2,570)
Net cash provided by operating activities	**37,993**	61,777	39,520
Investing activities			
Net change in:			
Time deposits placed and other short-term investments	**561**	387	3,659
Federal funds sold and securities borrowed or purchased under agreements to resell	**(29,461)**	(13,466)	(48,384)
Debt securities carried at fair value:			
Proceeds from sales	**77,524**	52,006	5,117
Proceeds from paydowns and maturities	**91,084**	79,114	78,513
Purchases	**(194,877)**	(152,782)	(76,640)
Held-to-maturity debt securities:			
Proceeds from paydowns and maturities	**93,835**	34,770	18,789
Purchases	**(257,535)**	(37,115)	(35,980)
Loans and leases:			
Proceeds from sales of loans originally classified as held for investment and instruments from related securitization activities	**13,351**	12,201	21,365
Purchases	**(5,229)**	(5,963)	(4,629)
Other changes in loans and leases, net	**36,571**	(46,808)	(31,292)
Other investing activities, net	**(3,489)**	(2,974)	(1,986)
Net cash used in investing activities	**(177,665)**	(80,630)	(71,468)
Financing activities			
Net change in:			
Deposits	**360,677**	53,327	71,931
Federal funds purchased and securities loaned or sold under agreements to repurchase	**5,214**	(21,879)	10,070
Short-term borrowings	**(4,893)**	4,004	(12,478)
Long-term debt:			
Proceeds from issuance	**57,013**	52,420	64,278
Retirement	**(47,948)**	(50,794)	(53,046)
Preferred stock:			
Proceeds from issuance	**2,181**	3,643	4,515
Redemption	**(1,072)**	(2,568)	(4,512)
Common stock repurchased	**(7,025)**	(28,144)	(20,094)
Cash dividends paid	**(7,727)**	(5,934)	(6,895)
Other financing activities, net	**(601)**	(698)	(651)
Net cash provided by financing activities	**355,819**	3,377	53,118
Effect of exchange rate changes on cash and cash equivalents	**2,756**	(368)	(1,200)
Net increase (decrease) in cash and cash equivalents	**218,903**	(15,844)	19,970
Cash and cash equivalents at January 1	**161,560**	177,404	157,434
Cash and cash equivalents at December 31	**$ 380,463**	$ 161,560	$ 177,404
Supplemental cash flow disclosures			
Interest paid	**$ 8,662**	$ 22,196	$ 19,087
Income taxes paid, net	**2,894**	4,359	2,470

See accompanying Notes to Consolidated Financial Statements.

See accompanying Notes to Consolidated Financial Statements.
See accompanying Notes to Consolidated Financial Statements.

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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 are included 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

Accounting for Financial Instruments – Credit Losses

On January 1, 2020, the Corporation adopted the new accounting standard that requires the measurement of the allowance for credit losses to be based on management's best estimate of lifetime expected credit losses (ECL) inherent in the Corporation's relevant financial assets. Upon adoption of the standard on January 1, 2020, the Corporation recorded a $3.3 billion, or 32 percent, increase to the allowance for credit losses. After adjusting for deferred taxes and other adoption effects, a $2.4 billion decrease was recorded in retained earnings through a cumulative-effect adjustment. Prior to January 1, 2020, the allowance for credit losses was determined based on management's estimate of probable incurred losses.

Reference Rate Reform

The Financial Accounting Standards Board (FASB) issued a new accounting standard in March 2020, which was subsequently amended in January 2021, related to contracts or hedging relationships that reference London Interbank Offered Rate (LIBOR) or other reference rates that are expected to be discontinued due to reference rate reform. The new standard provides for optional expedients and other guidance regarding the accounting related to modifications of contracts, hedging relationships and other transactions affected by reference rate reform. The Corporation has elected to retrospectively adopt the new standard as of January 1, 2020. The adoption did not have a material accounting impact on the Corporation's consolidated financial position or results of operations; however, it did ease the administrative burden in accounting for certain effects of reference rate reform.

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, except for securities financing agreements that the Corporation accounts for under the fair value option. Changes in the fair value of securities financing agreements that are accounted for under the fair value option 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.

Collateral

The Corporation accepts securities and loans as collateral that it is permitted by contract or practice to sell or repledge. At December 31, 2020 and 2019, the fair value of this collateral was $812.4 billion and $693.0 billion, of which $758.5 billion and $593.8 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.

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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.

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

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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 expected credit loss. 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 excepted 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 receivables. 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 receivables 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

The allowance for credit losses includes both the allowance for loan and lease losses and the reserve for unfunded lending commitments and represents management's 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. 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

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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.

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 troubled debt restructurings (TDR) 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

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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.

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.

Consumer loans secured by personal property, credit card loans and other unsecured consumer loans are not placed on nonaccrual status prior to charge-off and, therefore, are not reported as nonperforming loans, except for certain secured consumer loans, including those that have been modified in a TDR. Personal property-secured loans (including auto loans) are charged off to collateral value no later than the end of the month in which the account becomes 120 days past due, or upon repossession of an auto or, for loans in bankruptcy, within 60 days of receipt of notification of filing. Credit card and other unsecured customer loans 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.

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

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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.

COVID-19 Programs

The Corporation has implemented various consumer and commercial loan modification programs to provide its borrowers relief from the economic impacts of the COVID-19 pandemic (the pandemic). In accordance with the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), the Corporation has elected to not apply TDR classification to eligible COVID-19 related loan modifications that were performed after March 1, 2020 to loans that were current as of December 31, 2019. Accordingly, these restructurings are not classified as TDRs. The availability of this election expires upon the earlier of January 1, 2022 or 60 days after the national emergency related to COVID-19 terminates. In addition, for loans modified in response to the pandemic that do not meet the above criteria (e.g., current payment status at December 31, 2019), the Corporation is applying the guidance included in an interagency statement issued by the bank regulatory agencies. This guidance states that loan modifications performed in light of the pandemic, including loan payment deferrals that are up to six months in duration, that were granted to borrowers who were current as of the implementation date of a loan modification program or modifications granted under government mandated modification programs, are not TDRs. For loan modifications that include a payment deferral and are not TDRs, the borrowers' past due and nonaccrual status have not been impacted during the deferral period. The Corporation has continued to accrue interest during the deferral period using a constant effective yield method. For most mortgage, HELOC and commercial loan modifications, the contractual interest that accrued during the deferral period is payable at the maturity of the loan. The Corporation includes these amounts with the unpaid principal balance when computing its allowance for credit losses. Amounts that are subsequently deemed uncollectible are written off against the allowance for credit losses.

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.

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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

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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

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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, 2020, 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.

Paycheck Protection Program

The Corporation is participating in the Paycheck Protection Program (PPP), which is a loan program that originated from the CARES Act and was subsequently expanded by the Paycheck Protection Program and Health Care Enhancement Act. The PPP is designed to provide U.S. small businesses with cash-flow assistance through loans fully guaranteed by the Small

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Business Administration (SBA). If the borrower meets certain criteria and uses the proceeds towards certain eligible expenses, the borrower's obligation to repay the loan can be forgiven up to the full principal amount of the loan and any accrued interest. Upon borrower forgiveness, the SBA pays the Corporation for the principal and accrued interest owed on the loan. If the full principal of the loan is not forgiven, the loan will operate according to the original loan terms with the 100 percent SBA guaranty remaining. As of December 31, 2020, the Corporation had approximately 332,000 PPP loans with a carrying value of $22.7 billion. As compensation for originating the loans, the Corporation received lender processing fees from the SBA, which are capitalized, along with the loan origination costs, and will be amortized over the loans' contractual lives and recognized as interest income. Upon forgiveness of a loan and repayment by the SBA, any unrecognized net capitalized fees and costs related to the loan will be recognized as interest income in that period.

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 2020, 2019 and 2018. 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)	2020	2019	2018
Net interest income			
Interest income			
Loans and leases	$ 34,029	$ 43,086	$ 40,811
Debt securities	9,790	11,806	11,724
Federal funds sold and securities borrowed or purchased under agreements to resell	903	4,843	3,176
Trading account assets	4,128	5,196	4,811
Other interest income	2,735	6,305	6,247
Total interest income	51,585	71,236	66,769
Interest expense			
Deposits	1,943	7,188	4,495
Short-term borrowings	987	7,208	5,839
Trading account liabilities	974	1,249	1,358
Long-term debt	4,321	6,700	6,915
Total interest expense	8,225	22,345	18,607
Net interest income	$ 43,360	$ 48,891	$ 48,162
Noninterest income			
Fees and commissions			
Card income			
Interchange fees [1]	$ 3,954	$ 3,834	$ 3,866
Other card income	1,702	1,963	1,958
Total card income	5,656	5,797	5,824
Service charges			
Deposit-related fees	5,991	6,588	6,667
Lending-related fees	1,150	1,086	1,100
Total service charges	7,141	7,674	7,767
Investment and brokerage services			
Asset management fees	10,708	10,241	10,189
Brokerage fees	3,866	3,661	3,971
Total investment and brokerage services	14,574	13,902	14,160
Investment banking fees			
Underwriting income	4,698	2,998	2,722
Syndication fees	861	1,184	1,347
Financial advisory services	1,621	1,460	1,258
Total investment banking fees	7,180	5,642	5,327
Total fees and commissions	34,551	33,015	33,078
Market making and similar activities	8,355	9,034	9,008
Other income (loss)	(738)	304	772
Total noninterest income	$ 42,168	$ 42,353	$ 42,858

[1] Gross interchange fees were $9.2 billion, $10.0 billion and $9.5 billion for 2020, 2019 and 2018, respectively, and are presented net of $5.5 billion, $6.2 billion and $5.6 billion of expenses for rewards and partner payments as well as certain other card costs for the same periods.

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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, 2020 and 2019. 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, 2020					
		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	$ 13,242.8	$ 199.9	$ 10.9	$ 210.8	$ 209.3	$ 1.3	$ 210.6
Futures and forwards	3,222.2	3.5	0.1	3.6	3.6	—	3.6
Written options	1,530.5	—	—	—	40.5	—	40.5
Purchased options	1,545.8	45.3	—	45.3	—	—	—
Foreign exchange contracts							
Swaps	1,475.8	37.1	0.3	37.4	39.7	0.6	40.3
Spot, futures and forwards	3,710.7	53.4	—	53.4	54.5	0.5	55.0
Written options	289.6	—	—	—	4.8	—	4.8
Purchased options	279.3	5.0	—	5.0	—	—	—
Equity contracts							
Swaps	320.2	13.3	—	13.3	14.5	—	14.5
Futures and forwards	106.2	0.3	—	0.3	1.4	—	1.4
Written options	599.1	—	—	—	48.8	—	48.8
Purchased options	541.2	52.6	—	52.6	—	—	—
Commodity contracts							
Swaps	36.4	1.9	—	1.9	4.4	—	4.4
Futures and forwards	63.6	2.0	—	2.0	1.0	—	1.0
Written options	24.6	—	—	—	1.4	—	1.4
Purchased options	24.7	1.5	—	1.5	—	—	—
Credit derivatives [2]							
Purchased credit derivatives:							
Credit default swaps	322.7	2.3	—	2.3	4.4	—	4.4
Total return swaps/options	63.6	0.2	—	0.2	1.0	—	1.0
Written credit derivatives:							
Credit default swaps	301.5	4.4	—	4.4	1.9	—	1.9
Total return swaps/options	68.6	0.6	—	0.6	0.4	—	0.4
Gross derivative assets/liabilities		$ 423.3	$ 11.3	$ 434.6	$ 431.6	$ 2.4	$ 434.0
Less: Legally enforceable master netting agreements				(344.9)			(344.9)
Less: Cash collateral received/paid				(42.5)			(43.6)
Total derivative assets/liabilities				$ 47.2			$ 45.5

[1] Represents the total contract/notional amount of derivative assets and liabilities outstanding.
[2] 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 $2.2 billion and $269.8 billion at December 31, 2020.

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(Dollars in billions)	Contract/ Notional [1]	December 31, 2019 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	$ 15,074.4	$ 162.0	$ 9.7	$ 171.7	$ 168.5	$ 0.4	$ 168.9
Futures and forwards	3,279.8	1.0	—	1.0	1.0	—	1.0
Written options	1,767.7	—	—	—	32.5	—	32.5
Purchased options	1,673.6	37.4	—	37.4	—	—	—
Foreign exchange contracts							
Swaps	1,657.7	30.3	0.7	31.0	31.7	0.9	32.6
Spot, futures and forwards	3,792.7	35.9	0.1	36.0	38.7	0.3	39.0
Written options	274.3	—	—	—	3.8	—	3.8
Purchased options	261.6	4.0	—	4.0	—	—	—
Equity contracts							
Swaps	315.0	6.5	—	6.5	8.1	—	8.1
Futures and forwards	125.1	0.3	—	0.3	1.1	—	1.1
Written options	731.1	—	—	—	34.6	—	34.6
Purchased options	668.6	42.4	—	42.4	—	—	—
Commodity contracts							
Swaps	42.0	2.1	—	2.1	4.4	—	4.4
Futures and forwards	61.3	1.7	—	1.7	0.4	—	0.4
Written options	33.2	—	—	—	1.4	—	1.4
Purchased options	37.9	1.4	—	1.4	—	—	—
Credit derivatives [2]							
Purchased credit derivatives:							
Credit default swaps	321.6	2.7	—	2.7	5.6	—	5.6
Total return swaps/options	86.6	0.4	—	0.4	1.3	—	1.3
Written credit derivatives:							
Credit default swaps	300.2	5.4	—	5.4	2.0	—	2.0
Total return swaps/options	86.2	0.8	—	0.8	0.4	—	0.4
Gross derivative assets/liabilities		$ 334.3	$ 10.5	$ 344.8	$ 335.5	$ 1.6	$ 337.1
Less: Legally enforceable master netting agreements				(270.4)			(270.4)
Less: Cash collateral received/paid				(33.9)			(28.5)
Total derivative assets/liabilities				$ 40.5			$ 38.2

[1] Represents the total contract/notional amount of derivative assets and liabilities outstanding.
[2] 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 $2.8 billion and $309.7 billion at December 31, 2019.

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, 2020 and 2019 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 – Federal Funds Sold or Purchased, Securities Financing Agreements, Short-term Borrowings and Restricted Cash*.

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Offsetting of Derivatives [1]

(Dollars in billions)	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
	December 31, 2020		December 31, 2019	
Interest rate contracts				
Over-the-counter	$ 247.7	$ 243.5	$ 203.1	$ 196.6
Exchange-traded	—	—	0.1	0.1
Over-the-counter cleared	10.2	9.1	6.0	5.3
Foreign exchange contracts				
Over-the-counter	92.2	96.5	69.2	73.1
Over-the-counter cleared	1.4	1.3	0.5	0.5
Equity contracts				
Over-the-counter	31.3	28.3	21.3	17.8
Exchange-traded	32.3	31.0	26.4	22.8
Commodity contracts				
Over-the-counter	3.5	5.0	2.8	4.2
Exchange-traded	0.7	0.7	0.8	0.8
Over-the-counter cleared	—	—	—	0.1
Credit derivatives				
Over-the-counter	5.2	5.6	6.4	6.6
Over-the-counter cleared	2.2	1.9	2.5	2.2
Total gross derivative assets/liabilities, before netting				
Over-the-counter	379.9	378.9	302.8	298.3
Exchange-traded	33.0	31.7	27.3	23.7
Over-the-counter cleared	13.8	12.3	9.0	8.1
Less: Legally enforceable master netting agreements and cash collateral received/paid				
Over-the-counter	(345.7)	(347.2)	(274.7)	(269.3)
Exchange-traded	(29.5)	(29.5)	(21.5)	(21.5)
Over-the-counter cleared	(12.2)	(11.8)	(8.1)	(8.1)
Derivative assets/liabilities, after netting	39.3	34.4	34.8	31.2
Other gross derivative assets/liabilities [2]	7.9	11.1	5.7	7.0
Total derivative assets/liabilities	47.2	45.5	40.5	38.2
Less: Financial instruments collateral [3]	(16.1)	(16.6)	(14.6)	(16.1)
Total net derivative assets/liabilities	$ 31.1	$ 28.9	$ 25.9	$ 22.1

[1] OTC derivatives include bilateral transactions between the Corporation and a particular counterparty. OTC-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 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,

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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 following table summarizes information related to fair value hedges for 2020, 2019 and 2018.

Gains and Losses on Derivatives Designated as Fair Value Hedges

	Derivative			Hedged Item		
(Dollars in millions)	**2020**	2019	2018	**2020**	2019	2018
Interest rate risk on long-term debt [1]	**$ 7,091**	$ 6,113	$ (1,538)	**$ (7,220)**	$ (6,110)	$ 1,429
Interest rate and foreign currency risk on long-term debt [2]	**783**	119	(1,187)	**(783)**	(101)	1,079
Interest rate risk on available-for-sale securities [3]	**(44)**	(102)	(52)	**49**	98	50
Total	**$ 7,830**	$ 6,130	$ (2,777)	**$ (7,954)**	$ (6,113)	$ 2,558

[1] Amounts are recorded in interest expense in the Consolidated Statement of Income.
[2] In 2020, 2019 and 2018, the derivative amount includes gains (losses) of $701 million, $73 million and $(116) million in interest expense, $73 million, $28 million and $(992) million in market making and similar activities, and $9 million, $18 million and $(79) 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.

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 (Liabilities)

	Carrying Value	Cumulative Fair Value Adjustments [1]	Carrying Value	Cumulative Fair Value Adjustments [1]
(Dollars in millions)	**December 31, 2020**		December 31, 2019	
Long-term debt [2]	**$ (150,556)**	**$ (8,910)**	$ (162,389)	$ (8,685)
Available-for-sale debt securities [2, 3, 4]	**116,252**	**114**	1,654	64
Trading account assets [5]	**427**	**15**	—	—

[1] For assets, increase (decrease) to carrying value and for liabilities, (increase) decrease to carrying value.
[2] At December 31, 2020 and 2019, the cumulative fair value adjustments remaining on long-term debt and AFS debt securities from discontinued hedging relationships resulted in an (increase) decrease in the related liability of $(3.7) billion and $1.3 billion and an increase (decrease) in the related asset of $(69) million and $8 million, which are being amortized over the remaining contractual life of the de-designated hedged items.
[3] These amounts include the amortized cost basis 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, 2020, the amortized cost of the closed portfolios used in these hedging relationships was $34.6 billion, of which $7.0 billion was designated in the last-of-layer hedging relationship. The cumulative basis adjustments associated with these hedging relationships were not significant.
[4] Carrying value represents amortized cost.
[5] Represents hedging activities related to precious metals inventory.

Cash Flow and Net Investment Hedges

The following table summarizes certain information related to cash flow hedges and net investment hedges for 2020, 2019 and 2018. Of the $426 million after-tax net gain ($566 million pretax) on derivatives in accumulated OCI at December 31, 2020, gains of $190 million after-tax ($254 million pretax) related to both open and terminated hedges are expected to be reclassified into earnings in the next 12 months. These net gains reclassified into earnings are expected to primarily increase net interest income related to the respective hedged items. For terminated cash flow hedges, the time period over which the majority of the forecasted transactions are hedged is approximately 3 years, with a maximum length of time for certain forecasted transactions of 16 years.

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)	**2020**	2019	2018	**2020**	2019	2018
Cash flow hedges						
Interest rate risk on variable-rate assets [1]	**$ 763**	$ 671	$ (159)	**$ (7)**	$ (104)	$ (165)
Price risk on forecasted MBS purchases [1]	**241**	—	—	**9**	—	—
Price risk on certain compensation plans [2]	**85**	34	4	**12**	(2)	27
Total	**$ 1,089**	$ 705	$ (155)	**$ 14**	$ (106)	$ (138)
Net investment hedges						
Foreign exchange risk [3]	**$ (834)**	$ 22	$ 989	**$ 4**	$ 366	$ 411

[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 gains (losses) of $(11) million, $154 million and $47 million in 2020, 2019 and 2018, respectively.

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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 following table presents gains (losses) on these derivatives for 2020, 2019 and 2018. 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)	2020	2019	2018
Interest rate risk on mortgage activities [1, 2]	**$ 446**	$ 315	$ (107)
Credit risk on loans [2]	**(68)**	(58)	9
Interest rate and foreign currency risk on ALM activities [3]	**(2,971)**	1,112	3,278
Price risk on certain compensation plans [4]	**700**	943	(495)

(1) Primarily related to hedges of interest rate risk on MSRs and IRLCs to originate mortgage loans that will be held for sale. The net gains on IRLCs, which are not included in the table but are considered derivative instruments, were $165 million, $73 million and $47 million in 2020, 2019 and 2018.
(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, 2020 and 2019, the Corporation had transferred $5.2 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 $5.2 billion as of both transfer dates. At December 31, 2020 and 2019, the fair value of the transferred securities was $5.5 billion and $5.3 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 following table, 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 2020, 2019 and 2018. 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
		2020		
Interest rate risk	**$ 2,211**	**$ 2,400**	**$ 231**	**$ 4,842**
Foreign exchange risk	**1,482**	**(20)**	**3**	**1,465**
Equity risk	**3,656**	**(77)**	**1,801**	**5,380**
Credit risk	**812**	**1,638**	**328**	**2,778**
Other risk	**308**	**4**	**44**	**356**
Total sales and trading revenue	**$ 8,469**	**$ 3,945**	**$ 2,407**	**$ 14,821**
		2019		
Interest rate risk	$ 1,000	$ 1,817	$ 113	$ 2,930
Foreign exchange risk	1,288	62	57	1,407
Equity risk	3,563	(634)	1,569	4,498
Credit risk	1,091	1,807	519	3,417
Other risk	120	70	53	243
Total sales and trading revenue	$ 7,062	$ 3,122	$ 2,311	$ 12,495
		2018		
Interest rate risk	$ 810	$ 1,651	$ 245	$ 2,706
Foreign exchange risk	1,504	31	22	1,557
Equity risk	3,870	(657)	1,643	4,856
Credit risk	1,034	1,886	600	3,520
Other risk	40	197	49	286
Total sales and trading revenue	$ 7,258	$ 3,108	$ 2,559	$ 12,925

(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 $1.9 billion, $1.7 billion and $1.7 billion in 2020, 2019 and 2018, respectively.

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

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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, 2020 and 2019 are summarized in the following table.

Credit Derivative Instruments

(Dollars in millions)	Less than One Year	One to Three Years	Three to Five Years	Over Five Years	Total
	December 31, 2020				
	Carrying Value				
Credit default swaps:					
Investment grade	$ —	$ 1	$ 35	$ 94	$ 130
Non-investment grade	26	233	364	1,163	1,786
Total	26	234	399	1,257	1,916
Total return swaps/options:					
Investment grade	21	4	—	—	25
Non-investment grade	345	—	—	—	345
Total	366	4	—	—	370
Total credit derivatives	$ 392	$ 238	$ 399	$ 1,257	$ 2,286
Credit-related notes:					
Investment grade	$ —	$ —	$ —	$ 572	$ 572
Non-investment grade	64	2	10	947	1,023
Total credit-related notes	$ 64	$ 2	$ 10	$ 1,519	$ 1,595
	Maximum Payout/Notional				
Credit default swaps:					
Investment grade	$ 33,474	$ 75,731	$ 87,218	$ 16,822	$ 213,245
Non-investment grade	13,664	28,770	35,978	9,852	88,264
Total	47,138	104,501	123,196	26,674	301,509
Total return swaps/options:					
Investment grade	30,961	1,061	77	—	32,099
Non-investment grade	36,128	364	27	5	36,524
Total	67,089	1,425	104	5	68,623
Total credit derivatives	$ 114,227	$ 105,926	$ 123,300	$ 26,679	$ 370,132
	December 31, 2019				
	Carrying Value				
Credit default swaps:					
Investment grade	$ —	$ 5	$ 60	$ 164	$ 229
Non-investment grade	70	292	561	808	1,731
Total	70	297	621	972	1,960
Total return swaps/options:					
Investment grade	35	—	—	—	35
Non-investment grade	344	—	—	—	344
Total	379	—	—	—	379
Total credit derivatives	$ 449	$ 297	$ 621	$ 972	$ 2,339
Credit-related notes:					
Investment grade	$ —	$ 3	$ 1	$ 639	$ 643
Non-investment grade	6	2	1	1,125	1,134
Total credit-related notes	$ 6	$ 5	$ 2	$ 1,764	$ 1,777
	Maximum Payout/Notional				
Credit default swaps:					
Investment grade	$ 55,827	$ 67,838	$ 71,320	$ 17,708	$ 212,693
Non-investment grade	19,049	26,521	29,618	12,337	87,525
Total	74,876	94,359	100,938	30,045	300,218
Total return swaps/options:					
Investment grade	56,488	—	62	76	56,626
Non-investment grade	28,707	657	104	60	29,528
Total	85,195	657	166	136	86,154
Total credit derivatives	$ 160,071	$ 95,016	$ 101,104	$ 30,181	$ 386,372

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 table above 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.

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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 135, 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, 2020 and 2019, the Corporation held cash and securities collateral of $96.5 billion and $84.3 billion and posted cash and securities collateral of $88.6 billion and $69.1 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, 2020, 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 $2.6 billion, including $1.2 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, 2020 and 2019, 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, 2020 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.

Additional Collateral Required to be Posted Upon Downgrade at December 31, 2020

(Dollars in millions)	One incremental notch	Second incremental notch
Bank of America Corporation	$ 300	$ 735
Bank of America, N.A. and subsidiaries [1]	61	570

[1] Included in Bank of America Corporation collateral requirements in this table.

The following table presents the derivative liabilities that would be subject to unilateral termination by counterparties and the amounts of collateral that would have been contractually required at December 31, 2020 if the long-term senior debt ratings for the Corporation or certain subsidiaries had been lower by one incremental notch and by an additional second incremental notch.

Derivative Liabilities Subject to Unilateral Termination Upon Downgrade at December 31, 2020

(Dollars in millions)	One incremental notch	Second incremental notch
Derivative liabilities	$ 45	$ 1,035
Collateral posted	23	544

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 2020, 2019 and 2018. 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)	2020	2019	2018
Derivative assets (CVA)	**$ (118)**	$ 72	$ 77
Derivative assets/liabilities (FVA)	**(24)**	(2)	(15)
Derivative liabilities (DVA)	**24**	(147)	(19)

[1] At December 31, 2020, 2019 and 2018, cumulative CVA reduced the derivative assets balance by $646 million, $528 million and $600 million, cumulative FVA reduced the net derivatives balance by $177 million, $153 million and $151 million, and cumulative DVA reduced the derivative liabilities balance by $309 million, $285 million and $432 million, respectively.

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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, 2020 and 2019.

Debt Securities

(Dollars in millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	December 31, 2020			
Available-for-sale debt securities				
Mortgage-backed securities:				
Agency	$ 59,518	$ 2,370	$ (39)	$ 61,849
Agency-collateralized mortgage obligations	5,112	161	(13)	5,260
Commercial	15,470	1,025	(4)	16,491
Non-agency residential [1]	899	127	(17)	1,009
Total mortgage-backed securities	80,999	3,683	(73)	84,609
U.S. Treasury and agency securities	114,157	2,236	(13)	116,380
Non-U.S. securities	14,009	15	(7)	14,017
Other taxable securities, substantially all asset-backed securities	2,656	61	(6)	2,711
Total taxable securities	211,821	5,995	(99)	217,717
Tax-exempt securities	16,417	389	(32)	16,774
Total available-for-sale debt securities [3]	228,238	6,384	(131)	234,491
Other debt securities carried at fair value [2]	11,720	429	(39)	12,110
Total debt securities carried at fair value	239,958	6,813	(170)	246,601
Held-to-maturity debt securities, substantially all U.S. agency mortgage-backed securities [3]	438,279	10,095	(194)	448,180
Total debt securities [3,4]	$ 678,237	$ 16,908	$ (364)	$ 694,781
	December 31, 2019			
Available-for-sale debt securities				
Mortgage-backed securities:				
Agency	$ 121,698	$ 1,013	$ (183)	$ 122,528
Agency-collateralized mortgage obligations	4,587	78	(24)	4,641
Commercial	14,797	249	(25)	15,021
Non-agency residential [1]	948	138	(9)	1,077
Total mortgage-backed securities	142,030	1,478	(241)	143,267
U.S. Treasury and agency securities	67,700	1,023	(195)	68,528
Non-U.S. securities	11,987	6	(2)	11,991
Other taxable securities, substantially all asset-backed securities	3,874	67	—	3,941
Total taxable securities	225,591	2,574	(438)	227,727
Tax-exempt securities	17,716	202	(6)	17,912
Total available-for-sale debt securities	243,307	2,776	(444)	245,639
Other debt securities carried at fair value [2]	10,596	255	(23)	10,828
Total debt securities carried at fair value	253,903	3,031	(467)	256,467
Held-to-maturity debt securities, substantially all U.S. agency mortgage-backed securities	215,730	4,433	(342)	219,821
Total debt securities [3, 4]	$ 469,633	$ 7,464	$ (809)	$ 476,288

[1] At December 31, 2020 and 2019, the underlying collateral type included approximately 37 percent and 49 percent prime, two percent and six percent Alt-A and 61 percent and 45 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 $65.5 billion and $67.0 billion at December 31, 2020 and 2019.

[4] The Corporation held debt securities from FNMA and FHLMC that each exceeded 10 percent of shareholders' equity, with an amortized cost of $260.1 billion and $118.1 billion, and a fair value of $267.5 billion and $120.7 billion at December 31, 2020, and an amortized cost of $157.2 billion and $54.1 billion, and a fair value of $160.6 billion and $55.1 billion at December 31, 2019.

At December 31, 2020, the accumulated net unrealized gain on AFS debt securities, excluding the amount related to debt securities previously transferred to held to maturity, included in accumulated OCI was $4.7 billion, net of the related income tax expense of $1.6 billion. The Corporation had nonperforming AFS debt securities of $20 million and $9 million at December 31, 2020 and 2019.

Effective January 1, 2020, the Corporation adopted the new accounting standard for credit losses that requires evaluation of AFS and HTM debt securities for any expected losses with recognition of an allowance for credit losses, when applicable. For more information, see *Note 1 – Summary of Significant Accounting Principles*. At December 31, 2020, the Corporation had $200.0 billion in AFS debt securities, which were primarily U.S. agency and U.S. Treasury securities that have a zero credit loss assumption. For the remaining $34.5 billion in AFS debt securities, the amount of ECL was insignificant. Substantially all of the Corporation's HTM debt securities are U.S. agency and U.S. Treasury securities and have a zero credit loss assumption.

At December 31, 2020 and 2019, the Corporation held equity securities at an aggregate fair value of $769 million and $891 million and other equity securities, as valued under the measurement alternative, at a carrying value of $240 million and $183 million, both of which are included in other assets. At December 31, 2020 and 2019, the Corporation also held money market investments at a fair value of $1.6 billion and $1.0 billion, which are included in time deposits placed and other short-term investments.

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The gross realized gains and losses on sales of AFS debt securities for 2020, 2019 and 2018 are presented in the table below.

Gains and Losses on Sales of AFS Debt Securities

(Dollars in millions)	2020	2019	2018
Gross gains	$ 423	$ 336	$ 169
Gross losses	(12)	(119)	(15)
Net gains on sales of AFS debt securities	$ 411	$ 217	$ 154
Income tax expense attributable to realized net gains on sales of AFS debt securities	$ 103	$ 54	$ 37

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, 2020 and 2019.

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, 2020					
Continuously unrealized loss-positioned AFS debt securities						
Mortgage-backed securities:						
Agency	$ 2,841	$ (39)	$ 2	$ —	$ 2,843	$ (39)
Agency-collateralized mortgage obligations	187	(2)	364	(11)	551	(13)
Commercial	566	(4)	9	—	575	(4)
Non-agency residential	342	(9)	56	(8)	398	(17)
Total mortgage-backed securities	3,936	(54)	431	(19)	4,367	(73)
U.S. Treasury and agency securities	8,282	(9)	498	(4)	8,780	(13)
Non-U.S. securities	1,861	(6)	135	(1)	1,996	(7)
Other taxable securities, substantially all asset-backed securities	576	(2)	396	(4)	972	(6)
Total taxable securities	14,655	(71)	1,460	(28)	16,115	(99)
Tax-exempt securities	4,108	(29)	617	(3)	4,725	(32)
Total AFS debt securities in a continuous unrealized loss position	$ 18,763	$ (100)	$ 2,077	$ (31)	$ 20,840	$ (131)
	December 31, 2019					
Continuously unrealized loss-positioned AFS debt securities						
Mortgage-backed securities:						
Agency	$ 17,641	$ (41)	$ 17,238	$ (142)	$ 34,879	$ (183)
Agency-collateralized mortgage obligations	255	(1)	925	(23)	1,180	(24)
Commercial	2,180	(22)	442	(3)	2,622	(25)
Non-agency residential	122	(6)	22	(3)	144	(9)
Total mortgage-backed securities	20,198	(70)	18,627	(171)	38,825	(241)
U.S. Treasury and agency securities	12,836	(71)	18,866	(124)	31,702	(195)
Non-U.S. securities	851	—	837	(2)	1,688	(2)
Other taxable securities, substantially all asset-backed securities	938	—	222	—	1,160	—
Total taxable securities	34,823	(141)	38,552	(297)	73,375	(438)
Tax-exempt securities	4,286	(5)	190	(1)	4,476	(6)
Total AFS debt securities in a continuous unrealized loss position	$ 39,109	$ (146)	$ 38,742	$ (298)	$ 77,851	$ (444)

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The remaining contractual maturity distribution and yields of the Corporation's debt securities carried at fair value and HTM debt securities at December 31, 2020 are summarized in the table below. Actual duration and yields may differ as prepayments on the loans underlying the mortgages 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	$ —	— %	$ 7	5.69 %	$ 56	4.44 %	$ 59,455	3.36 %	$ 59,518	3.36 %
Agency-collateralized mortgage obligations	—	—	—	—	24	2.57	5,088	2.94	5,112	2.94
Commercial	26	3.04	6,669	2.52	7,711	2.32	1,077	2.64	15,483	2.43
Non-agency residential	—	—	—	—	1	—	1,620	6.77	1,621	6.77
Total mortgage-backed securities	26	3.04	6,676	2.52	7,792	2.34	67,240	3.40	81,734	3.23
U.S. Treasury and agency securities	10,020	1.26	29,533	1.85	74,665	0.74	32	2.55	114,250	1.07
Non-U.S. securities	22,862	0.31	926	1.81	581	1.09	532	1.79	24,901	0.42
Other taxable securities, substantially all asset-backed securities	699	1.15	1,336	2.46	366	2.26	255	1.60	2,656	2.00
Total taxable securities	33,607	0.61	38,471	1.99	83,404	0.89	68,059	3.38	223,541	1.80
Tax-exempt securities	872	0.87	8,430	1.27	4,397	1.66	2,718	1.41	16,417	1.38
Total amortized cost of debt securities carried at fair value	**$ 34,479**	**0.62**	**$ 46,901**	**1.86**	**$ 87,801**	**0.93**	**$ 70,777**	**3.30**	**$ 239,958**	**1.77**
Amortized cost of HTM debt securities [2]	**$ 15**	**3.78**	**$ 66**	**2.73**	**$ 17,133**	**1.86**	**$ 421,065**	**2.40**	**$ 438,279**	**2.38**
Debt securities carried at fair value										
Mortgage-backed securities:										
Agency	$ —		$ 7		$ 61		$ 61,781		$ 61,849	
Agency-collateralized mortgage obligations	—		—		24		5,236		5,260	
Commercial	26		7,077		8,242		1,160		16,505	
Non-agency residential	—		—		7		1,776		1,783	
Total mortgage-backed securities	26		7,084		8,334		69,953		85,397	
U.S. Treasury and agency securities	10,056		30,873		75,511		33		116,473	
Non-U.S. securities	23,187		940		582		534		25,243	
Other taxable securities, substantially all asset-backed securities	702		1,369		379		264		2,714	
Total taxable securities	33,971		40,266		84,806		70,784		229,827	
Tax-exempt securities	874		8,554		4,566		2,780		16,774	
Total debt securities carried at fair value	**$ 34,845**		**$ 48,820**		**$ 89,372**		**$ 73,564**		**$ 246,601**	
Fair value of HTM debt securities [2]	**$ 14**		**$ 69**		**$ 17,139**		**$ 430,958**		**$ 448,180**	

[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.

[2] Substantially all U.S. agency MBS.

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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, 2020 and 2019.

(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, 2020						
Consumer real estate							
Core portfolio							
Residential mortgage	$ 1,157	$ 175	$ 786	$ 2,118	$ 213,155		$ 215,273
Home equity	126	61	269	456	29,872		30,328
Non-core portfolio							
Residential mortgage	273	122	913	1,308	6,974		8,282
Home equity	28	17	76	121	3,862		3,983
Credit card and other consumer							
Credit card	445	341	903	1,689	77,019		78,708
Direct/Indirect consumer [2]	209	67	37	313	91,050		91,363
Other consumer	—	—	—	—	124		124
Total consumer	2,238	783	2,984	6,005	422,056		428,061
Consumer loans accounted for under the fair value option [3]						$ 735	735
Total consumer loans and leases	2,238	783	2,984	6,005	422,056	735	428,796
Commercial							
U.S. commercial	561	214	512	1,287	287,441		288,728
Non-U.S. commercial	61	44	11	116	90,344		90,460
Commercial real estate [4]	128	113	226	467	59,897		60,364
Commercial lease financing	86	20	57	163	16,935		17,098
U.S. small business commercial [5]	84	56	123	263	36,206		36,469
Total commercial	920	447	929	2,296	490,823		493,119
Commercial loans accounted for under the fair value option [3]						5,946	5,946
Total commercial loans and leases	920	447	929	2,296	490,823	5,946	499,065
Total loans and leases [6]	$ 3,158	$ 1,230	$ 3,913	$ 8,301	$ 912,879	$ 6,681	$ 927,861
Percentage of outstandings	0.34 %	0.13 %	0.42 %	0.89 %	98.39 %	0.72 %	100.00 %

[1] Consumer real estate loans 30-59 days past due includes fully-insured loans of $225 million and nonperforming loans of $126 million. Consumer real estate loans 60-89 days past due includes fully-insured loans of $103 million and nonperforming loans of $95 million. Consumer real estate loans 90 days or more past due includes fully-insured loans of $762 million. Consumer real estate loans current or less than 30 days past due includes $1.2 billion and direct/indirect consumer includes $66 million of nonperforming loans. For information on the Corporation's interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles*.

[2] Total outstandings primarily includes auto and specialty lending loans and leases of $46.4 billion, U.S. securities-based lending loans of $41.1 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 $298 million and home equity loans of $437 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 $3.0 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 $57.2 billion and non-U.S. commercial real estate loans of $3.2 billion.

[5] Includes PPP loans.

[6] Total outstandings includes loans and leases pledged as collateral of $15.5 billion. The Corporation also pledged $153.1 billion of loans with no related outstanding borrowings to secure potential borrowing capacity with the Federal Reserve Bank and Federal Home Loan Bank.

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(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, 2019						
Consumer real estate							
Core portfolio							
Residential mortgage	$ 1,378	$ 261	$ 565	$ 2,204	$ 223,566		$ 225,770
Home equity	135	70	198	403	34,823		35,226
Non-core portfolio							
Residential mortgage	458	209	1,263	1,930	8,469		10,399
Home equity	34	16	72	122	4,860		4,982
Credit card and other consumer							
Credit card	564	429	1,042	2,035	95,573		97,608
Direct/Indirect consumer [2]	297	85	35	417	90,581		90,998
Other consumer	—	—	—	—	192		192
Total consumer	2,866	1,070	3,175	7,111	458,064		465,175
Consumer loans accounted for under the fair value option [3]						$ 594	594
Total consumer loans and leases	2,866	1,070	3,175	7,111	458,064	594	465,769
Commercial							
U.S. commercial	788	279	371	1,438	305,610		307,048
Non-U.S. commercial	35	23	8	66	104,900		104,966
Commercial real estate [4]	144	19	119	282	62,407		62,689
Commercial lease financing	100	56	39	195	19,685		19,880
U.S. small business commercial	119	56	107	282	15,051		15,333
Total commercial	1,186	433	644	2,263	507,653		509,916
Commercial loans accounted for under the fair value option [3]						7,741	7,741
Total commercial loans and leases	1,186	433	644	2,263	507,653	7,741	517,657
Total loans and leases [5]	$ 4,052	$ 1,503	$ 3,819	$ 9,374	$ 965,717	$ 8,335	$ 983,426
Percentage of outstandings	0.41 %	0.15 %	0.39 %	0.95 %	98.20 %	0.85 %	100.00 %

[1] Consumer real estate loans 30-59 days past due includes fully-insured loans of $517 million and nonperforming loans of $139 million. Consumer real estate loans 60-89 days past due includes fully-insured loans of $206 million and nonperforming loans of $114 million. Consumer real estate loans 90 days or more past due includes fully-insured loans of $1.1 billion. Consumer real estate loans current or less than 30 days past due includes $856 million and direct/indirect consumer includes $45 million of nonperforming loans.

[2] Total outstandings primarily includes auto and specialty lending loans and leases of $50.4 billion, U.S. securities-based lending loans of $36.7 billion and non-U.S. consumer loans of $2.8 billion.

[3] Consumer loans accounted for under the fair value option includes residential mortgage loans of $257 million and home equity loans of $337 million. Commercial loans accounted for under the fair value option includes U.S. commercial loans of $4.7 billion and non-U.S. commercial loans of $3.1 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 $59.0 billion and non-U.S. commercial real estate loans of $3.7 billion.

[5] Total outstandings includes loans and leases pledged as collateral of $25.9 billion. The Corporation also pledged $168.2 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 categorizes consumer real estate loans as core and non-core based on loan and customer characteristics such as origination date, product type, LTV, Fair Isaac Corporation (FICO) score and delinquency status consistent with its current consumer and mortgage servicing strategy. Generally, loans that were originated after January 1, 2010, qualified under government-sponsored enterprise (GSE) underwriting guidelines, or otherwise met the Corporation's underwriting guidelines in place in 2015 are characterized as core loans. All other loans are generally characterized as non-core loans and represent runoff portfolios.

The Corporation has entered into long-term credit protection agreements with FNMA and FHLMC on loans totaling $9.0 billion and $7.5 billion at December 31, 2020 and 2019, 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 increased to $2.2 billion at December 31, 2020 from $1.5 billion at December 31, 2019 with broad-based increases across multiple industries. Consumer nonperforming loans increased to $2.7 billion at December 31, 2020 from $2.1 billion at December 31, 2019 driven by deferral activity, as well as the inclusion of $144 million of certain loans that were previously classified as purchased credit-impaired loans and accounted for under a pool basis.

The table below presents the Corporation's nonperforming loans and leases including nonperforming TDRs, and loans accruing past due 90 days or more at December 31, 2020 and 2019. 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 information on the Corporation's interest accrual policies, delinquency status for loan modifications related to the pandemic and the criteria for classification as nonperforming, see *Note 1 – Summary of Significant Accounting Principles.*

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Credit Quality

(Dollars in millions)	Nonperforming Loans and Leases		Accruing Past Due 90 Days or More [1]	
	December 31			
	2020	2019	2020	2019
Residential mortgage [2]	$ 2,005	$ 1,470	$ 762	$ 1,088
With no related allowance [3]	1,378	n/a	—	—
Home equity [2]	649	536	—	—
With no related allowance [3]	347	n/a	—	—
Credit Card	n/a	n/a	903	1,042
Direct/indirect consumer	71	47	33	33
Total consumer	2,725	2,053	1,698	2,163
U.S. commercial	1,243	1,094	228	106
Non-U.S. commercial	418	43	10	8
Commercial real estate	404	280	6	19
Commercial lease financing	87	32	25	20
U.S. small business commercial	75	50	115	97
Total commercial	2,227	1,499	384	250
Total nonperforming loans	$ 4,952	$ 3,552	$ 2,082	$ 2,413
Percentage of outstanding loans and leases	0.54 %	0.36 %	0.23 %	0.25 %

[1] For information on the Corporation's interest accrual policies and delinquency status for loan modifications related to the pandemic, see *Note 1 – Summary of Significant Accounting Principles*.
[2] Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2020 and 2019 residential mortgage includes $537 million and $740 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 $225 million and $348 million of loans on which interest was still accruing.
[3] 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

Included in the December 31, 2020 nonperforming loans are $127 million and $17 million of residential mortgage and home equity loans that prior to the January 1, 2020 adoption of the new credit loss standard were not included in nonperforming loans, as they were previously classified as purchased credit-impaired loans and accounted for under a pool basis.

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 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 for the Corporation's Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments by class of financing receivables and year of origination for term loan balances at December 31, 2020, including revolving loans that converted to term loans without an additional credit decision after origination or through a TDR.

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Residential Mortgage – Credit Quality Indicators By Vintage

(Dollars in millions)	Total as of December 31, 2020	Term Loans by Origination Year: 2020	2019	2018	2017	2016	Prior
Total Residential Mortgage							
Refreshed LTV							
Less than or equal to 90 percent	**$ 207,389**	$ 68,907	$ 43,771	$ 14,658	$ 21,589	$ 22,967	$ 35,497
Greater than 90 percent but less than or equal to 100 percent	**3,138**	1,970	684	128	70	96	190
Greater than 100 percent	**1,210**	702	174	47	39	37	211
Fully-insured loans	**11,818**	3,826	2,014	370	342	1,970	3,296
Total Residential Mortgage	**$ 223,555**	$ 75,405	$ 46,643	$ 15,203	$ 22,040	$ 25,070	$ 39,194
Total Residential Mortgage							
Refreshed FICO score							
Less than 620	**$ 2,717**	$ 823	$ 177	$ 139	$ 170	$ 150	$ 1,258
Greater than or equal to 620 and less than 680	**5,462**	1,804	666	468	385	368	1,771
Greater than or equal to 680 and less than 740	**25,349**	8,533	4,679	1,972	2,427	2,307	5,431
Greater than or equal to 740	**178,209**	60,419	39,107	12,254	18,716	20,275	27,438
Fully-insured loans	**11,818**	3,826	2,014	370	342	1,970	3,296
Total Residential Mortgage	**$ 223,555**	$ 75,405	$ 46,643	$ 15,203	$ 22,040	$ 25,070	$ 39,194

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, 2020			
Total Home Equity				
Refreshed LTV				
Less than or equal to 90 percent	**$ 33,447**	**$ 1,919**	**$ 22,639**	**$ 8,889**
Greater than 90 percent but less than or equal to 100 percent	**351**	**126**	**94**	**131**
Greater than 100 percent	**513**	**172**	**118**	**223**
Total Home Equity	**$ 34,311**	**$ 2,217**	**$ 22,851**	**$ 9,243**
Total Home Equity				
Refreshed FICO score				
Less than 620	**$ 1,082**	**$ 250**	**$ 244**	**$ 588**
Greater than or equal to 620 and less than 680	**1,798**	**263**	**568**	**967**
Greater than or equal to 680 and less than 740	**5,762**	**556**	**2,905**	**2,301**
Greater than or equal to 740	**25,669**	**1,148**	**19,134**	**5,387**
Total Home Equity	**$ 34,311**	**$ 2,217**	**$ 22,851**	**$ 9,243**

[1] Includes reverse mortgages of $1.3 billion and home equity loans of $885 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, 2020	Direct/Indirect: Revolving Loans	Direct/Indirect: Term Loans by Origination Year: 2020	2019	2018	2017	2016	Prior	Credit Card: Total Credit Card as of December 31, 2020	Credit Card: Revolving Loans	Credit Card: Revolving Loans Converted to Term Loans [3]
Refreshed FICO score											
Less than 620	**$ 959**	$ 19	$ 111	$ 200	$ 175	$ 243	$ 148	$ 63	**$ 4,018**	$ 3,832	$ 186
Greater than or equal to 620 and less than 680	**2,143**	20	653	559	329	301	176	105	**9,419**	9,201	218
Greater than or equal to 680 and less than 740	**7,431**	80	2,848	2,015	1,033	739	400	316	**27,585**	27,392	193
Greater than or equal to 740	**36,064**	120	12,540	10,588	5,869	3,495	1,781	1,671	**37,686**	37,642	44
Other internal credit metrics [1, 2]	**44,766**	44,098	74	115	84	67	52	276	**—**	—	—
Total credit card and other consumer	**$ 91,363**	$ 44,337	$ 16,226	$ 13,477	$ 7,490	$ 4,845	$ 2,557	$ 2,431	**$ 78,708**	$ 78,067	$ 641

[1] Other internal credit metrics may include delinquency status, geography or other factors.
[2] Direct/indirect consumer includes $44.1 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, 2020.
[3] Represents TDRs that were modified into term loans.

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Commercial – Credit Quality Indicators By Vintage [1, 2]

(Dollars in millions)	Total as of December 31, 2020	Term Loans Amortized Cost Basis by Origination Year 2020	2019	2018	2017	2016	Prior	Revolving Loans
U.S. Commercial								
Risk ratings								
Pass rated	**$ 268,812**	$ 33,456	$ 33,305	$ 17,363	$ 14,102	$ 7,420	$ 21,784	$ 141,382
Reservable criticized	**19,916**	2,524	2,542	2,689	854	698	1,402	9,207
Total U.S. Commercial	**$ 288,728**	$ 35,980	$ 35,847	$ 20,052	$ 14,956	$ 8,118	$ 23,186	$ 150,589
Non-U.S. Commercial								
Risk ratings								
Pass rated	**$ 85,914**	$ 16,301	$ 11,396	$ 7,451	$ 5,037	$ 1,674	$ 2,194	$ 41,861
Reservable criticized	**4,546**	914	572	492	436	138	259	1,735
Total Non-U.S. Commercial	**$ 90,460**	$ 17,215	$ 11,968	$ 7,943	$ 5,473	$ 1,812	$ 2,453	$ 43,596
Commercial Real Estate								
Risk ratings								
Pass rated	**$ 50,260**	$ 8,429	$ 14,126	$ 8,228	$ 4,599	$ 3,299	$ 6,542	$ 5,037
Reservable criticized	**10,104**	933	2,558	2,115	1,582	606	1,436	874
Total Commercial Real Estate	**$ 60,364**	$ 9,362	$ 16,684	$ 10,343	$ 6,181	$ 3,905	$ 7,978	$ 5,911
Commercial Lease Financing								
Risk ratings								
Pass rated	**$ 16,384**	$ 3,083	$ 3,242	$ 2,956	$ 2,532	$ 1,703	$ 2,868	$ —
Reservable criticized	**714**	117	117	132	81	88	179	—
Total Commercial Lease Financing	**$ 17,098**	$ 3,200	$ 3,359	$ 3,088	$ 2,613	$ 1,791	$ 3,047	$ —
U.S. Small Business Commercial [3]								
Risk ratings								
Pass rated	**$ 28,786**	$ 24,539	$ 1,121	$ 837	$ 735	$ 527	$ 855	$ 172
Reservable criticized	**1,148**	76	239	210	175	113	322	13
Total U.S. Small Business Commercial	**$ 29,934**	$ 24,615	$ 1,360	$ 1,047	$ 910	$ 640	$ 1,177	$ 185
Total [1, 2]	**$ 486,584**	$ 90,372	$ 69,218	$ 42,473	$ 30,133	$ 16,266	$ 37,841	$ 200,281

(1) Excludes $5.9 billion of loans accounted for under the fair value option at December 31, 2020.
(2) Includes $58 million of loans that converted from revolving to term loans.
(3) Excludes U.S. Small Business Card loans of $6.5 billion. Refreshed FICO scores for this portfolio are $265 million for less than 620; $582 million for greater than or equal to 620 and less than 680; $1.7 billion for greater than or equal to 680 and less than 740; and $3.9 billion greater than or equal to 740.

Due to the economic impact of COVID-19, commercial asset quality weakened during 2020. Commercial reservable criticized utilized exposure increased to $38.7 billion at December 31, 2020 from $11.5 billion (to 7.31 percent from 2.09 percent of total commercial reservable utilized exposure) at December 31, 2019 with increases spread across multiple industries, including travel and entertainment.

Troubled Debt Restructurings

The Corporation has been entering into loan modifications with borrowers in response to the pandemic, most of which are not classified as TDRs, and therefore are not included in the discussion below. For more information on the criteria for classifying loans as TDRs, see *Note 1 – Summary of Significant Accounting Principles*.

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 $372 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, 2020, of which $102 million were classified as nonperforming and $68 million were loans fully insured.

Consumer real estate TDRs are measured primarily based on the net present value of the estimated cash flows discounted at the loan's original effective interest rate. If the carrying value of a TDR exceeds this amount, a specific allowance is recorded as a component of the allowance for loan and lease losses. Alternatively, consumer real estate TDRs that are considered to be dependent solely on the collateral for repayment (e.g., due to the lack of income verification) are measured based on the estimated fair value of the collateral, and a charge-off is recorded if the carrying value exceeds the fair value of the collateral. Consumer real estate loans that reach 180 days past due prior to modification are charged off to their net realizable value, less costs to sell, before they are modified as TDRs in accordance with established policy. Subsequent declines in the fair value of the collateral after a loan has reached 180 days past due are recorded as charge-offs. Fully-insured loans are

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protected against principal loss, and therefore, the Corporation does not record an allowance for loan and lease losses on the outstanding principal balance, even after they have been modified in a TDR.

At December 31, 2020 and 2019, 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 $123 million and $229 million at December 31, 2020 and 2019. The carrying value of consumer real estate loans, including fully-insured loans, for which formal foreclosure proceedings were in process at December 31, 2020 was $1.2 billion. Although the Corporation has paused formal loan foreclosure proceedings and foreclosure sales for occupied properties, during 2020, the Corporation reclassified $182 million of consumer real estate loans completed or which were in process prior to the pause in foreclosures, 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, 2020, 2019 and 2018 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of consumer real estate loans that were modified in TDRs during 2020, 2019 and 2018. 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 2020, 2019 and 2018 [1]

(Dollars in millions)	Unpaid Principal Balance	Carrying Value	Pre-Modification Interest Rate	Post-Modification Interest Rate [2]
	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**
	December 31, 2019			
Residential mortgage	$ 464	$ 377	4.19 %	4.13 %
Home equity	141	101	5.04	4.31
Total	$ 605	$ 478	4.39	4.17
	December 31, 2018			
Residential mortgage	$ 774	$ 641	4.33 %	4.21 %
Home equity	489	358	4.46	3.74
Total	$ 1,263	$ 999	4.38	4.03

[1] For more information on the Corporation's loan modification programs offered in response to the pandemic, most of which are not TDRs, see *Note 1 – Summary of Significant Accounting Principles*.
[2] 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, 2020, 2019 and 2018 carrying value for consumer real estate loans that were modified in a TDR during 2020, 2019 and 2018, by type of modification.

Consumer Real Estate – Modification Programs [1]

(Dollars in millions)	TDRs Entered into During 2020	2019	2018
Modifications under government programs	**$ 13**	$ 35	$ 61
Modifications under proprietary programs	**570**	174	523
Loans discharged in Chapter 7 bankruptcy [2]	**53**	68	130
Trial modifications	**79**	201	285
Total modifications	**$ 715**	$ 478	$ 999

[1] For more information on the Corporation's loan modification programs offered in response to the pandemic, most of which are not TDRs, see *Note 1 – Summary of Significant Accounting Principles*.
[2] Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.

The table below presents the carrying value of consumer real estate loans that entered into payment default during 2020, 2019 and 2018 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 [1]

(Dollars in millions)	2020	2019	2018
Modifications under government programs	**$ 16**	$ 26	$ 39
Modifications under proprietary programs	**51**	88	158
Loans discharged in Chapter 7 bankruptcy [2]	**19**	30	64
Trial modifications [3]	**54**	57	107
Total modifications	**$ 140**	$ 201	$ 368

[1] For more information on the Corporation's loan modification programs offered in response to the pandemic, most of which are not TDRs, see *Note 1 – Summary of Significant Accounting Principles*.
[2] Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.
[3] Includes trial modification offers to which the customer did not respond.

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Credit Card and Other Consumer

The Corporation seeks to assist customers that 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, 2020, 2019 and 2018 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of loans that were modified in TDRs during 2020, 2019 and 2018.

Credit Card and Other Consumer – TDRs Entered into During 2020, 2019 and 2018 [1]

(Dollars in millions)	Unpaid Principal Balance	Carrying Value [2]	Pre-Modification Interest Rate	Post-Modification Interest Rate
	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**
	December 31, 2019			
Credit card	$ 340	$ 355	19.18 %	5.35 %
Direct/Indirect consumer	40	21	5.23	5.21
Total	$ 380	$ 376	18.42	5.34
	December 31, 2018			
Credit card	$ 278	$ 292	19.49 %	5.24 %
Direct/Indirect consumer	42	23	5.10	4.95
Total	$ 320	$ 315	18.45	5.22

[1] For more information on the Corporation's loan modification programs offered in response to the pandemic, most of which are not TDRs, see *Note 1 – Summary of Significant Accounting Principles*.
[2] Includes accrued interest and fees.

The table below presents the December 31, 2020, 2019 and 2018 carrying value for Credit Card and Other Consumer loans that were modified in a TDR during 2020, 2019 and 2018, by program type.

Credit Card and Other Consumer – TDRs by Program Type at December 31 [1]

(Dollars in millions)	2020	2019	2018
Internal programs	**$ 225**	$ 247	$ 199
External programs	**73**	108	93
Other	**16**	21	23
Total	**$ 314**	$ 376	$ 315

[1] Includes accrued interest and fees. For more information on the Corporation's loan modification programs offered in response to the pandemic, most of which are not TDRs, see *Note 1 – Summary of Significant Accounting Principles*.

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 13 percent of new credit card TDRs and 19 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. For more information on modifications for the U.S. small business commercial portfolio, see Credit Card and Other Consumer in this Note.

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At December 31, 2020 and 2019, the Corporation had $1.7 billion and $2.2 billion of commercial TDRs with remaining commitments to lend additional funds to debtors of $402 million and $445 million. The balance of commercial TDRs in payment default was $218 million and $207 million at December 31, 2020 and 2019.

Loans Held-for-sale

The Corporation had LHFS of $9.2 billion at both December 31, 2020 and 2019. Cash and non-cash proceeds from sales and paydowns of loans originally classified as LHFS were $20.1 billion, $30.6 billion and $29.2 billion for 2020, 2019 and 2018, respectively. Cash used for originations and purchases of LHFS totaled approximately $19.7 billion, $28.9 billion and $28.1 billion for 2020, 2019 and 2018, respectively.

Accrued Interest Receivable

Accrued interest receivable for loans and leases and loans held-for-sale at December 31, 2020 and 2019 was $2.4 billion and $2.6 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 2020, the Corporation reversed $512 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 2020, the Corporation reversed $44 million of interest and fee income at the time the loans were classified as nonperforming against the income statement line item in which it was originally recorded. For more information on the Corporation's nonperforming loan policies, see *Note 1 – Summary of Significant Accounting Principles*.

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 to be based on management's best estimate of lifetime ECL inherent in the Corporation's relevant financial assets. Upon adoption of the new accounting standard, the Corporation recorded a $3.3 billion, or 32 percent, increase in the allowance for credit losses 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 net increase in the allowance for loan and lease losses was primarily driven by a $3.1 billion increase in credit card as the Corporation now reserves for the life of these receivables. The increase in the reserve for unfunded lending commitments included $119 million in the consumer portfolio for the undrawn portion of HELOCs and $191 million in the commercial portfolio. 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 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.

As of January 1, 2020, to determine the allowance for credit losses, the Corporation used a series of economic outlooks that resulted in an economic outlook that was weighted towards the potential of a recession with some expectation of tail risk similar to the severely adverse scenario used in stress testing. Various economic outlooks were also used in the December 31, 2020 estimate for allowance for credit losses that included consensus estimates, multiple downside scenarios which assumed a significantly longer period until economic recovery, a tail risk scenario similar to the severely adverse scenario used in stress testing and an upside scenario to reflect the potential for continued improvement in the consensus outlooks. The weighted economic outlook assumes that the U.S. unemployment rate at the end of 2021 would be relatively consistent with the level as of December 2020, slightly above 6.5 percent. Additionally, in this economic outlook, U.S. gross domestic product returns to pre-pandemic levels in the early part of 2022. The allowance for credit losses considers the impact of enacted government stimulus, including the COVID-19 Emergency Relief Act of 2020, and continues to factor in the unprecedented nature of the current health crisis.

The Corporation also factored into its allowance for credit losses an estimated impact from higher-risk segments that included leveraged loans and industries such as travel and entertainment, which have been adversely impacted by the effects of COVID-19, as well as the energy sector. The Corporation also holds additional reserves for borrowers who requested deferrals that take into account their credit characteristics and payment behavior subsequent to deferral.

The allowance for credit losses at December 31, 2020 was $20.7 billion, an increase of $7.2 billion compared to January 1, 2020. The increase in the allowance for credit losses was driven by the deterioration in the economic outlook resulting from the impact of COVID-19. The increase in the allowance for credit losses was comprised of a net increase of $6.4 billion in the allowance for loan and lease losses and a $755 million increase in the reserve for unfunded lending commitments. The increase in the allowance for loan and lease losses was attributed to $418 million in the consumer real estate portfolio, $1.8 billion in the credit card and other consumer portfolio, and $4.2 billion in the commercial portfolio.

Outstanding loans and leases excluding loans accounted for under the fair value option decreased $53.9 billion in 2020, driven by consumer loans, which decreased $37.1 billion primarily due to a decline in credit card loans from reduced retail spending and higher payments.

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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
		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 [1]	**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**
		2019		
Allowance for loan and lease losses, January 1	$ 928	$ 3,874	$ 4,799	$ 9,601
Loans and leases charged off	(522)	(4,302)	(822)	(5,646)
Recoveries of loans and leases previously charged off	927	911	160	1,998
Net charge-offs	405	(3,391)	(662)	(3,648)
Provision for loan and lease losses	(680)	3,512	742	3,574
Other [1]	(107)	1	(5)	(111)
Allowance for loan and lease losses, December 31	546	3,996	4,874	9,416
Reserve for unfunded lending commitments, January 1	—	—	797	797
Provision for unfunded lending commitments	—	—	16	16
Reserve for unfunded lending commitments, December 31	—	—	813	813
Allowance for credit losses, December 31	$ 546	$ 3,996	$ 5,687	$ 10,229
		2018		
Allowance for loan and lease losses, January 1	$ 1,720	$ 3,663	$ 5,010	$ 10,393
Loans and leases charged off	(690)	(4,037)	(675)	(5,402)
Recoveries of loans and leases previously charged off	664	823	152	1,639
Net charge-offs	(26)	(3,214)	(523)	(3,763)
Provision for loan and lease losses	(492)	3,441	313	3,262
Other [1]	(274)	(16)	(1)	(291)
Allowance for loan and lease losses, December 31	928	3,874	4,799	9,601
Reserve for unfunded lending commitments, January 1	—	—	777	777
Provision for unfunded lending commitments	—	—	20	20
Reserve for unfunded lending commitments, December 31	—	—	797	797
Allowance for credit losses, December 31	$ 928	$ 3,874	$ 5,596	$ 10,398

[1] Primarily represents write-offs of purchased credit-impaired loans in 2019, and the net impact of portfolio sales, transfers to held-for-sale and transfers to foreclosed properties.

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, 2020 and 2019 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, 2020 and 2019 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.

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The Corporation did not provide financial support to consolidated or unconsolidated VIEs during 2020, 2019 and 2018 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 $929 million and $1.1 billion at December 31, 2020 and 2019.

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 2020, 2019 and 2018.

First-lien Mortgage Securitizations

	Residential Mortgage - Agency			Commercial Mortgage		
(Dollars in millions)	**2020**	2019	2018	**2020**	2019	2018
Proceeds from loan sales [1]	**$ 15,823**	$ 6,858	$ 5,801	**$ 5,084**	$ 8,661	$ 6,991
Gains on securitizations [2]	**728**	27	62	**61**	103	101
Repurchases from securitization trusts [3]	**436**	881	1,485	**—**	—	—

[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 RMBS 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 $160 million, $64 million and $71 million net of hedges, during 2020, 2019 and 2018, 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 $160.4 billion and $192.1 billion at December 31, 2020 and 2019. Servicing fee and ancillary fee income on serviced loans was $474 million, $585 million and $710 million during 2020, 2019 and 2018, respectively. Servicing advances on serviced loans, including loans serviced for others and loans held for investment, were $2.2 billion and $2.4 billion at December 31, 2020 and 2019. For more information on MSRs, see *Note 20 – Fair Value Measurements*.

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, 2020 and 2019.

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First-lien Mortgage VIEs

(Dollars in millions)	Residential Mortgage								Commercial Mortgage	
	Agency		Non-agency Prime		Non-agency Subprime		Non-agency Alt-A			
	December 31									
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Unconsolidated VIEs										
Maximum loss exposure [1]	**$ 13,477**	$ 12,554	**$ 250**	$ 340	**$ 1,031**	$ 1,622	**$ 46**	$ 98	**$ 1,169**	$ 1,036
On-balance sheet assets										
Senior securities:										
Trading account assets	**$ 152**	$ 627	**$ 2**	$ 5	**$ 8**	$ 54	**$ 12**	$ 24	**$ 60**	$ 65
Debt securities carried at fair value	**7,588**	6,392	**103**	193	**676**	1,178	**33**	72	**—**	—
Held-to-maturity securities	**5,737**	5,535	**—**	—	**—**	—	**—**	—	**925**	809
All other assets	**—**	—	**6**	2	**26**	49	**1**	2	**50**	38
Total retained positions	**$ 13,477**	$ 12,554	**$ 111**	$ 200	**$ 710**	$ 1,281	**$ 46**	$ 98	**$ 1,035**	$ 912
Principal balance outstanding [2]	**$ 133,497**	$ 160,226	**$ 6,081**	$ 7,268	**$ 6,691**	$ 8,594	**$ 16,554**	$ 19,878	**$ 59,268**	$ 60,129
Consolidated VIEs										
Maximum loss exposure [1]	**$ 1,328**	$ 10,857	**$ 66**	$ 5	**$ 53**	$ 44	**$ —**	$ —	**$ —**	$ —
On-balance sheet assets										
Trading account assets	**$ 1,328**	$ 780	**$ 350**	$ 116	**$ 260**	$ 149	**$ —**	$ —	**$ —**	$ —
Loans and leases, net	**—**	9,917	**—**	—	**—**	—	**—**	—	**—**	—
All other assets	**—**	161	**—**	—	**—**	—	**—**	—	**—**	—
Total assets	**$ 1,328**	$ 10,858	**$ 350**	$ 116	**$ 260**	$ 149	**$ —**	$ —	**$ —**	$ —
Total liabilities	**$ —**	$ 4	**$ 284**	$ 111	**$ 207**	$ 105	**$ —**	$ —	**$ —**	$ —

[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 following table 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, 2020 and 2019.

Home Equity Loan, Credit Card and Other Asset-backed VIEs

(Dollars in millions)	Home Equity [1]		Credit Card [2]		Resecuritization Trusts		Municipal Bond Trusts	
	December 31							
	2020	2019	2020	2019	2020	2019	2020	2019
Unconsolidated VIEs								
Maximum loss exposure	**$ 206**	$ 412	**$ —**	$ —	**$ 8,543**	$ 7,526	**$ 3,507**	$ 3,701
On-balance sheet assets								
Securities [3]:								
Trading account assets	**$ —**	$ —	**$ —**	$ —	**$ 948**	$ 2,188	**$ —**	$ —
Debt securities carried at fair value	**2**	11	**—**	—	**2,727**	1,126	**—**	—
Held-to-maturity securities	**—**	—	**—**	—	**4,868**	4,212	**—**	—
Total retained positions	**$ 2**	$ 11	**$ —**	$ —	**$ 8,543**	$ 7,526	**$ —**	$ —
Total assets of VIEs	**$ 609**	$ 1,023	**$ —**	$ —	**$ 17,250**	$ 21,234	**$ 4,042**	$ 4,395
Consolidated VIEs								
Maximum loss exposure	**$ 58**	$ 64	**$ 14,606**	$ 17,915	**$ 217**	$ 54	**$ 1,030**	$ 2,656
On-balance sheet assets								
Trading account assets	**$ —**	$ —	**$ —**	$ —	**$ 217**	$ 73	**$ 990**	$ 2,480
Loans and leases	**218**	122	**21,310**	26,985	**—**	—	**—**	—
Allowance for loan and lease losses	**14**	(2)	**(1,704)**	(800)	**—**	—	**—**	—
All other assets	**4**	3	**1,289**	119	**—**	—	**40**	176
Total assets	**$ 236**	$ 123	**$ 20,895**	$ 26,304	**$ 217**	$ 73	**$ 1,030**	$ 2,656
On-balance sheet liabilities								
Short-term borrowings	**$ —**	$ —	**$ —**	$ —	**$ —**	$ —	**$ 432**	$ 2,175
Long-term debt	**178**	64	**6,273**	8,372	**—**	19	**—**	—
All other liabilities	**—**	—	**16**	17	**—**	—	**—**	—
Total liabilities	**$ 178**	$ 64	**$ 6,289**	$ 8,389	**$ —**	$ 19	**$ 432**	$ 2,175

[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, 2020 and 2019, loans and leases in the consolidated credit card trust included $7.6 billion and $10.5 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 table above. The charges that will ultimately be recorded as a result of the rapid amortization

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events depend on the undrawn portion of the HELOCs, 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 2020, 2019 and 2018, the Corporation issued new senior debt securities to third-party investors from the credit card securitization trust of $1.0 billion, $1.3 billion and $4.0 billion, respectively.

At December 31, 2020 and 2019, the Corporation held subordinate securities issued by the credit card securitization trust with a notional principal amount of $6.8 billion and $7.4 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 2020, 2019 and 2018, the credit card securitization trust issued $161 million, $202 million and $650 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 $39.0 billion, $24.4 billion and $22.8 billion of securities during 2020, 2019 and 2018, 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 $6.1 billion, $5.2 billion and $4.1 billion during 2020, 2019 and 2018, respectively. In 2019 and 2018, 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 resecuritizations 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 and debt 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 $3.5 billion and $3.7 billion at December 31, 2020 and 2019. The weighted-average remaining life of bonds held in the trusts at December 31, 2020 was 6.8 years. There were no significant write-downs or downgrades of assets or issuers during 2020, 2019 and 2018.

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, 2020 and 2019.

Other VIEs

(Dollars in millions)	Consolidated	Unconsolidated	Total	Consolidated	Unconsolidated	Total
	December 31, 2020			December 31, 2019		
Maximum loss exposure [1]	**$ 4,106**	**$ 23,870**	**$ 27,976**	$ 4,055	$ 21,069	$ 25,124
On-balance sheet assets						
Trading account assets [1]	**$ 2,080**	**$ 623**	**$ 2,703**	$ 2,213	$ 549	$ 2,762
Debt securities carried at fair value [1]	**—**	**9**	**9**	—	10	10
Loans and leases [1]	**2,108**	**184**	**2,292**	1,810	533	2,343
Allowance for loan and lease losses [1]	**(3)**	**(3)**	**(6)**	(2)	—	(2)
All other assets [1]	**54**	**22,553**	**22,607**	81	19,354	19,435
Total [1]	**$ 4,239**	**$ 23,366**	**$ 27,605**	$ 4,102	$ 20,446	$ 24,548
On-balance sheet liabilities						
Short-term borrowings	**$ 22**	**$ —**	**$ 22**	$ —	$ —	$ —
Long-term debt	**111**	**—**	**111**	46	—	46
All other liabilities [1]	**—**	**5,658**	**5,658**	2	4,896	4,898
Total [1]	**$ 133**	**$ 5,658**	**$ 5,791**	$ 48	$ 4,896	$ 4,944
Total assets of VIEs [1]	**$ 4,239**	**$ 77,984**	**$ 82,223**	$ 4,102	$ 70,120	$ 74,222

[1] Prior-period amounts have been revised to remove certain entities that are no longer considered VIEs.

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 $2.3 billion and $2.2 billion at December 31, 2020 and 2019, 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

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counterparty to the CDOs. The Corporation's maximum loss exposure to consolidated and unconsolidated CDOs totaled $298 million and $304 million at December 31, 2020 and 2019.

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, 2020 and 2019, the Corporation's consolidated investment VIEs had total assets of $494 million and $104 million. The Corporation also held investments in unconsolidated VIEs with total assets of $5.4 billion and $5.1 billion at December 31, 2020 and 2019. The Corporation's maximum loss exposure associated with both consolidated and unconsolidated investment VIEs totaled $1.5 billion and $1.6 billion at December 31, 2020 and 2019 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 $1.7 billion at both December 31, 2020 and 2019. 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. The Corporation earns a return primarily through the receipt of tax credits allocated to the projects. The maximum loss exposure included in the Other VIEs table was $22.0 billion and $18.9 billion at December 31, 2020 and 2019. 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 $11.2 billion and $10.0 billion, including unfunded commitments to provide capital contributions of $5.0 billion and $4.3 billion at December 31, 2020 and 2019. The unfunded commitments are expected to be paid over the next five years. During 2020, 2019 and 2018, the Corporation recognized tax credits and other tax benefits from investments in affordable housing partnerships of $1.2 billion, $1.0 billion and $981 million and reported pretax losses in other income of $1.0 billion, $882 million and $798 million, respectively. Tax credits are recognized as part of the Corporation's annual effective tax rate used to determine tax expense in a given quarter. Accordingly, the portion of a year's expected tax benefits recognized in any given quarter may differ from 25 percent. The Corporation may from time to time 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 and *All Other* at December 31, 2020 and 2019. The reporting units utilized for goodwill impairment testing are the operating segments or one level below.

Goodwill

	December 31	
(Dollars in millions)	**2020**	2019
Consumer Banking	**$ 30,123**	$ 30,123
Global Wealth & Investment Management	**9,677**	9,677
Global Banking	**23,923**	23,923
Global Markets	**5,182**	5,182
All Other	**46**	46
Total goodwill	**$ 68,951**	$ 68,951

During 2020, the Corporation completed its annual goodwill impairment test as of June 30, 2020 using a quantitative assessment 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 quantitative assessments, see *Note 1 – Summary of Significant Accounting Principles.*

Intangible Assets

At December 31, 2020 and 2019, the net carrying value of intangible assets was $2.2 billion and $1.7 billion. During 2020, the Corporation recognized a $585 million intangible asset, which is being amortized over a 10-year life, related to the merchant contracts that were distributed to the Corporation from its merchant servicing joint venture. For more information, see *Note 12 – Commitments and Contingencies*.

At both December 31, 2020 and 2019, 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 $95 million, $112 million and $538 million for 2020, 2019 and 2018.

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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 following table presents the net investment in sales-type and direct financing leases at December 31, 2020 and 2019.

Net Investment [1]

	December 31	
(Dollars in millions)	**2020**	2019
Lease receivables	**$ 17,627**	$ 19,312
Unguaranteed residuals	**2,303**	2,550
Total net investment in sales-type and direct financing leases	**$ 19,930**	$ 21,862

[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 $6.9 billion and $5.8 billion at December 31, 2020 and 2019.

The following table presents lease income at December 31, 2020 and 2019.

Lease Income

	December 31	
(Dollars in millions)	**2020**	2019
Sales-type and direct financing leases	**$ 707**	$ 797
Operating leases	**931**	891
Total lease income	**$ 1,638**	$ 1,688

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, 2020 and 2019.

Lessee Arrangements

	December 31	
(Dollars in millions)	**2020**	2019
Right-of-use asset	**$ 10,000**	$ 9,735
Lease liabilities	**10,474**	10,093
Weighted-average discount rate used to calculate present value of future minimum lease payments	**3.38 %**	3.68 %
Weighted-average lease term (in years)	**8.4**	8.2
Lease Cost and Supplemental Information:		
Operating lease cost	**$ 2,149**	$ 2,085
Variable lease cost [1]	**474**	498
Total lease cost [2]	**$ 2,623**	$ 2,583
Right-of-use assets obtained in exchange for new operating lease liabilities [3]	**$ 851**	$ 931
Operating cash flows from operating leases [4]	**2,039**	2,009

[1] Primarily consists of payments for common area maintenance and property taxes.
[2] Amounts are recorded in occupancy and equipment expense in the Consolidated Statement of Income.
[3] Represents non-cash activity and, accordingly, is not reflected in the Consolidated Statement of Cash Flows.
[4] Represents cash paid for amounts included in the measurements of lease liabilities.

Maturity Analysis

The maturities of lessor and lessee arrangements outstanding at December 31, 2020 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, 2020		
2021	$ 843	$ 5,424	$ 1,927
2022	748	4,934	1,715
2023	630	3,637	1,454
2024	479	2,089	1,308
2025	339	1,143	1,087
Thereafter	886	1,668	4,609
Total undiscounted cash flows	$ 3,925	18,895	12,100
Less: Net present value adjustment		1,268	1,626
Total [3]		**$ 17,627**	**$ 10,474**

[1] Excludes $885 million in commitments under lessee arrangements that have not yet commenced with lease terms that will begin in 2021.
[2] Includes $12.7 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 table below presents information about the Corporation's time deposits of $100,000 or more at December 31, 2020 and 2019. The Corporation also had aggregate time deposits of $10.7 billion and $15.8 billion in denominations that met or exceeded the Federal Deposit Insurance Corporation (FDIC) insurance limit at December 31, 2020 and 2019.

Time Deposits of $100,000 or More

	December 31, 2020				December 31 2019
(Dollars in millions)	Three Months or Less	Over Three Months to Twelve Months	Thereafter	Total	Total
U.S. certificates of deposit and other time deposits	**$ 12,485**	**$ 10,668**	**$ 1,445**	**$ 24,598**	$ 39,739
Non-U.S. certificates of deposit and other time deposits	**8,568**	**1,925**	**1,432**	**11,925**	13,034

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The scheduled contractual maturities for total time deposits at December 31, 2020 are presented in the table below.

Contractual Maturities of Total Time Deposits

(Dollars in millions)	U.S.	Non-U.S.	Total
Due in 2021	$ 40,052	$ 10,609	**$ 50,661**
Due in 2022	2,604	167	**2,771**
Due in 2023	431	4	**435**
Due in 2024	222	5	**227**
Due in 2025	186	13	**199**
Thereafter	276	1,287	**1,563**
Total time deposits	$ 43,771	$ 12,085	**$ 55,856**

NOTE 10 Federal Funds Sold or Purchased, Securities Financing Agreements, Short-term Borrowings and Restricted Cash

The table below presents federal funds sold or purchased, securities financing agreements (which include securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase) and short-term borrowings. The Corporation elects to account for certain securities financing agreements and short-term borrowings under the fair value option. For more information on the fair value option, see *Note 21 – Fair Value Option*.

	Amount	Rate	Amount	Rate
(Dollars in millions)	2020		2019	
Federal funds sold and securities borrowed or purchased under agreements to resell				
Average during year	**$ 309,945**	**0.29 %**	$ 279,610	1.73 %
Maximum month-end balance during year	**451,179**	**n/a**	281,684	n/a
Federal funds purchased and securities loaned or sold under agreements to repurchase				
Average during year	**$ 192,479**	**0.69 %**	$ 201,797	2.31 %
Maximum month-end balance during year	**206,493**	**n/a**	203,063	n/a
Short-term borrowings				
Average during year	**22,486**	**0.54**	24,301	2.42
Maximum month-end balance during year	**30,118**	**n/a**	36,538	n/a

n/a = not applicable

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 $3.9 billion and $11.7 billion at December 31, 2020 and 2019. 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.

Offsetting of Securities Financing Agreements

The Corporation enters into securities financing agreements to accommodate customers (also referred to as "matched-book transactions"), obtain securities to cover short positions and finance inventory positions. 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, 2020 and 2019. 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*.

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Securities Financing Agreements

(Dollars in millions)	Gross Assets/ Liabilities [1]	Amounts Offset	Net Balance Sheet Amount	Financial Instruments [2]	Net Assets/ Liabilities
	December 31, 2020				
Securities borrowed or purchased under agreements to resell [3]	**$ 492,387**	**$ (188,329)**	**$ 304,058**	**$ (272,351)**	**$ 31,707**
Securities loaned or sold under agreements to repurchase	**$ 358,652**	**$ (188,329)**	**$ 170,323**	**$ (158,867)**	**$ 11,456**
Other [4]	**16,210**	**—**	**16,210**	**(16,210)**	**—**
Total	**$ 374,862**	**$ (188,329)**	**$ 186,533**	**$ (175,077)**	**$ 11,456**
	December 31, 2019				
Securities borrowed or purchased under agreements to resell [3]	$ 434,257	$ (159,660)	$ 274,597	$ (244,486)	$ 30,111
Securities loaned or sold under agreements to repurchase	$ 324,769	$ (159,660)	$ 165,109	$ (141,482)	$ 23,627
Other [4]	15,346	—	15,346	(15,346)	—
Total	$ 340,115	$ (159,660)	$ 180,455	$ (156,828)	$ 23,627

[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 $14.7 billion and $12.9 billion reported in loans and leases on the Consolidated Balance Sheet at December 31, 2020 and 2019.
[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, 2020				
Securities sold under agreements to repurchase	**$ 158,400**	**$ 122,448**	**$ 32,149**	**$ 22,684**	**$ 335,681**
Securities loaned	**19,140**	**271**	**1,029**	**2,531**	**22,971**
Other	**16,210**	**—**	**—**	**—**	**16,210**
Total	**$ 193,750**	**$ 122,719**	**$ 33,178**	**$ 25,215**	**$ 374,862**
	December 31, 2019				
Securities sold under agreements to repurchase	$ 129,455	$ 122,685	$ 25,322	$ 21,922	$ 299,384
Securities loaned	18,766	3,329	1,241	2,049	25,385
Other	15,346	—	—	—	15,346
Total	$ 163,567	$ 126,014	$ 26,563	$ 23,971	$ 340,115

[1] No agreements have maturities greater than three years.

Class of Collateral Pledged

(Dollars in millions)	Securities Sold Under Agreements to Repurchase	Securities Loaned	Other	Total
	December 31, 2020			
U.S. government and agency securities	**$ 195,167**	**$ 5**	**$ —**	**$ 195,172**
Corporate securities, trading loans and other	**8,633**	**1,628**	**1,217**	**11,478**
Equity securities	**14,752**	**21,125**	**14,931**	**50,808**
Non-U.S. sovereign debt	**113,142**	**213**	**62**	**113,417**
Mortgage trading loans and ABS	**3,987**	**—**	**—**	**3,987**
Total	**$ 335,681**	**$ 22,971**	**$ 16,210**	**$ 374,862**
	December 31, 2019			
U.S. government and agency securities	$ 173,533	$ 1	$ —	$ 173,534
Corporate securities, trading loans and other	10,467	2,014	258	12,739
Equity securities	14,933	20,026	15,024	49,983
Non-U.S. sovereign debt	96,576	3,344	64	99,984
Mortgage trading loans and ABS	3,875	—	—	3,875
Total	$ 299,384	$ 25,385	$ 15,346	$ 340,115

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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.

Restricted Cash

At December 31, 2020 and 2019, the Corporation held restricted cash included within cash and cash equivalents on the Consolidated Balance Sheet of $7.0 billion and $24.4 billion, predominantly related to cash held on deposit with the Federal Reserve Bank and non-U.S. central banks to meet reserve requirements and cash segregated in compliance with securities regulations.

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, 2020 and 2019, and the related contractual rates and maturity dates as of December 31, 2020.

(Dollars in millions)	Weighted-average Rate	Interest Rates	Maturity Dates	December 31 2020	December 31 2019
Notes issued by Bank of America Corporation [1]					
Senior notes:					
Fixed	3.05 %	0.25 - 8.05 %	2021 - 2051	$ 174,385	$ 140,265
Floating	0.74	0.09 - 4.96	2021 - 2044	16,788	19,552
Senior structured notes				17,033	16,941
Subordinated notes:					
Fixed	4.89	2.94 - 8.57	2021 - 2045	23,337	21,632
Floating	1.15	0.88 - 1.41	2022 - 2026	799	782
Junior subordinated notes:					
Fixed	6.71	6.45 - 8.05	2027 - 2066	738	736
Floating	1.03	1.03	2056	1	1
Total notes issued by Bank of America Corporation				233,081	199,909
Notes issued by Bank of America, N.A.					
Senior notes:					
Fixed	3.34	3.34	2023	511	508
Floating	0.33	0.28 - 0.49	2021 - 2041	2,323	6,519
Subordinated notes	6.00	6.00	2036	1,883	1,744
Advances from Federal Home Loan Banks:					
Fixed	0.99	0.01 - 7.72	2021 - 2034	599	112
Floating				—	2,500
Securitizations and other BANA VIEs [2]				6,296	8,373
Other				683	402
Total notes issued by Bank of America, N.A.				12,295	20,158
Other debt					
Structured liabilities				16,792	20,442
Nonbank VIEs [2]				757	347
Other				9	—
Total notes issued by nonbank and other entities				17,558	20,789
Total long-term debt				$ 262,934	$ 240,856

[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.

During 2020, the Corporation issued $56.9 billion of long-term debt consisting of $43.8 billion of notes issued by Bank of America Corporation, $4.8 billion of notes issued by Bank of America, N.A. and $8.3 billion of other debt. During 2019, the Corporation issued $52.5 billion of long-term debt consisting of $29.3 billion of notes issued by Bank of America Corporation, $10.9 billion of notes issued by Bank of America, N.A. and $12.3 billion of other debt.

During 2020, the Corporation had total long-term debt maturities and redemptions in the aggregate of $47.1 billion consisting of $22.6 billion for Bank of America Corporation, $11.5 billion for Bank of America, N.A. and $13.0 billion of other debt. During 2019, the Corporation had total long-term debt maturities and redemptions in the aggregate of $50.6 billion consisting of $21.1 billion for Bank of America Corporation, $19.9 billion for Bank of America, N.A. and $9.6 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, 2020 and 2019, the amount of foreign currency-denominated debt translated into U.S. dollars included in total long-term debt was $54.6 billion and $49.6 billion. Foreign currency contracts may be used to convert certain foreign currency-denominated debt into U.S. dollars.

At December 31, 2020, long-term debt of consolidated VIEs in the table above included debt from credit card, residential mortgage, home equity and other VIEs of $6.3 billion, $491 million, $178 million and $111 million, respectively. Long-term debt of VIEs is collateralized by the assets of the VIEs. For more information, see *Note 6 – Securitizations and Other Variable Interest Entities.*

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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 3.02 percent, 3.29 percent and 0.71 percent, respectively, at December 31, 2020, and 3.26 percent, 3.55 percent and 1.92 percent, respectively, at December 31, 2019. 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.

Debt outstanding of $4.8 billion at December 31, 2020 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.

The table below shows the carrying value for aggregate annual contractual maturities of long-term debt as of December 31, 2020. 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)	2021	2022	2023	2024	2025	Thereafter	Total
Bank of America Corporation							
Senior notes	$ 8,888	$ 15,380	$ 23,872	$ 21,407	$ 15,723	$ 105,903	**$ 191,173**
Senior structured notes	469	2,034	597	190	549	13,194	**17,033**
Subordinated notes	371	393	—	3,351	5,537	14,484	**24,136**
Junior subordinated notes	—	—	—	—	—	739	**739**
Total Bank of America Corporation	9,728	17,807	24,469	24,948	21,809	134,320	**233,081**
Bank of America, N.A.							
Senior notes	1,340	975	511	—	—	8	**2,834**
Subordinated notes	—	—	—	—	—	1,883	**1,883**
Advances from Federal Home Loan Banks	502	3	1	—	18	75	**599**
Securitizations and other Bank VIEs [1]	4,056	1,241	977	—	—	22	**6,296**
Other	112	16	189	—	279	87	**683**
Total Bank of America, N.A.	6,010	2,235	1,678	—	297	2,075	**12,295**
Other debt							
Structured Liabilities	4,613	2,414	2,221	655	859	6,030	**16,792**
Nonbank VIEs [1]	1	—	—	—	—	756	**757**
Other	—	—	—	—	—	9	**9**
Total other debt	4,614	2,414	2,221	655	859	6,795	**17,558**
Total long-term debt	**$ 20,352**	**$ 22,456**	**$ 28,368**	**$ 25,603**	**$ 22,965**	**$ 143,190**	**$ 262,934**

[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 $10.5 billion and $10.6 billion at December 31, 2020 and 2019. The carrying value of these commitments at December 31, 2020 and 2019, excluding commitments accounted for under the fair value option, was $1.9 billion and $829 million, which primarily 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 table below includes the notional amount of commitments of $4.0 billion and $4.4 billion at December 31, 2020 and 2019 that are accounted for under the fair value option. However, the table excludes cumulative net fair value of $99 million and $90 million at December 31, 2020 and 2019 on these commitments, 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.*

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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, 2020				
Notional amount of credit extension commitments					
Loan commitments [1]	$ 109,406	$ 171,887	$ 139,508	$ 16,091	$ 436,892
Home equity lines of credit	710	2,992	8,738	29,892	42,332
Standby letters of credit and financial guarantees [2]	19,962	12,038	2,397	1,257	35,654
Letters of credit [3]	886	197	25	27	1,135
Legally binding commitments	130,964	187,114	150,668	47,267	516,013
Credit card lines [4]	384,955	—	—	—	384,955
Total credit extension commitments	$ 515,919	$ 187,114	$ 150,668	$ 47,267	$ 900,968
	December 31, 2019				
Notional amount of credit extension commitments					
Loan commitments [1]	$ 97,454	$ 148,000	$ 173,699	$ 24,487	$ 443,640
Home equity lines of credit	1,137	1,948	6,351	34,134	43,570
Standby letters of credit and financial guarantees [2]	21,311	11,512	3,712	408	36,943
Letters of credit [3]	1,156	254	65	25	1,500
Legally binding commitments	121,058	161,714	183,827	59,054	525,653
Credit card lines [4]	376,067	—	—	—	376,067
Total credit extension commitments	$ 497,125	$ 161,714	$ 183,827	$ 59,054	$ 901,720

[1] At December 31, 2020 and 2019, $4.8 billion and $5.1 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 $25.0 billion and $10.2 billion at December 31, 2020, and $27.9 billion and $8.6 billion at December 31, 2019. Amounts in the table include consumer SBLCs of $500 million and $413 million at December 31, 2020 and 2019.

[3] At December 31, 2020 and 2019, included are letters of credit of $1.8 billion and $1.4 billion related to certain liquidity commitments of VIEs. For more information, see *Note 6 – Securitizations and Other Variable Interest Entities*.

[4] Includes business card unused lines of credit.

Other Commitments

At December 31, 2020 and 2019, the Corporation had commitments to purchase loans (e.g., residential mortgage and commercial real estate) of $93 million and $86 million, which upon settlement will be included in trading account assets, loans or LHFS, and commitments to purchase commercial loans of $645 million and $1.1 billion, which upon settlement will be included in trading account assets.

At December 31, 2020 and 2019, the Corporation had commitments to purchase commodities, primarily liquefied natural gas, of $582 million and $830 million, which upon settlement will be included in trading account assets.

At December 31, 2020 and 2019, the Corporation had commitments to enter into resale and forward-dated resale and securities borrowing agreements of $66.5 billion and $97.2 billion, and commitments to enter into forward-dated repurchase and securities lending agreements of $32.1 billion and $24.9 billion. These commitments generally expire within the next 12 months.

At December 31, 2020 and 2019, the Corporation had a commitment to originate or purchase up to $3.9 billion and $3.3 billion on a rolling 12-month basis, of auto loans and leases from a strategic partner. This commitment extends through November 2022 and can be terminated with 12 months prior notice.

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, 2020 and 2019, the notional amount of these guarantees totaled $7.1 billion and $7.3 billion. At both December 31, 2020 and 2019, the Corporation's maximum exposure related to these guarantees totaled $1.1 billion, 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

Prior to July 1, 2020, a significant portion of the Corporation's merchant processing activity was performed by a joint venture in which the Corporation held a 49 percent ownership interest. On July 29, 2019, the Corporation gave notice to the joint venture partner of the termination of the joint venture upon the conclusion of its current term on June 30, 2020. Effective July 1, 2020, the Corporation received its share of the joint venture's merchant contracts and began performing merchant processing services for these merchants. While merchants bear responsibility for any credit or debit card charges properly reversed by the cardholder, the Corporation, in its role as merchant acquirer, may be held liable for any reversed charges that cannot be collected from the merchants due to, among other things, merchant fraud or insolvency.

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The Corporation, as a card network member bank, also sponsors other merchant acquirers, principally its former joint venture partner with respect to merchant contracts distributed to that partner upon the termination of the joint venture. 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 regulatory and card network rules, which include, but are not limited to, the type of charge, type of payment used and time limits. For the six-months ended December 31, 2020, the Corporation processed an aggregate purchase volume of $339.2 billion. 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. The Corporation continues to monitor its exposure in this area due to the potential economic impacts of COVID-19.

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 $22.5 billion and $9.3 billion at December 31, 2020 and 2019.

Other Guarantees

The Corporation has entered into additional guarantee agreements and commitments, including sold risk participation swaps, liquidity facilities, lease-end obligation agreements, partial credit guarantees on certain leases, real estate joint venture guarantees, divested business commitments and sold put options that require gross settlement. The maximum potential future payments under these agreements are approximately $8.8 billion and $8.7 billion at December 31, 2020 and 2019. The estimated maturity dates of these obligations extend up to 2049. The Corporation has made no material payments under these guarantees. For more information on maximum potential future payments under VIE-related liquidity commitments, see *Note 6 – Securitizations and Other Variable Interest Entities*.

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

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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, 2020 and 2019 was $8.5 billion and $10.7 billion. These balances included $2.9 billion and $3.7 billion at December 31, 2020 and 2019 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 2020, the Corporation received $89 million in new repurchase claims that were not time-barred. During 2020, $2.4 billion in claims were resolved, including $168 million of claims that were deemed time-barred.

Reserve and Related Provision

The reserve for representations and warranties obligations and corporate guarantees was $1.3 billion and $1.8 billion at December 31, 2020 and 2019 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 disclosed in this Note, 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 litigation-related 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-related expense of $823 million and $681 million was recognized in 2020 and 2019.

For the matters 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 $1.3 billion in excess of the accrued liability, if any, as of December 31, 2020.

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 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 herein, 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 these matters, some of which are beyond the Corporation's control, and the very large or indeterminate damages sought in some of these matters, an adverse outcome in one or more of these matters could be material to the Corporation's business or results of operations for any particular reporting period, or cause significant reputational harm.

Ambac Bond Insurance Litigation

Ambac Assurance Corporation and the Segregated Account of Ambac Assurance Corporation (together, Ambac) have filed four separate lawsuits against the Corporation and its subsidiaries relating to bond insurance policies Ambac provided on certain securitized pools of HELOCs, first-lien subprime home equity loans, fixed-rate second-lien mortgage loans and negative amortization pay option adjustable-rate mortgage loans. Ambac alleges that they have paid or will pay claims as a result of defaults in the underlying loans and asserts that the defendants misrepresented the characteristics of the underlying loans and/or breached certain contractual representations and warranties regarding the underwriting and servicing of the loans. In those actions where the Corporation is named as a defendant, Ambac contends the Corporation is liable on various successor and vicarious liability theories. These actions are at various procedural stages with material developments provided below.

Ambac v. Countrywide I

The Corporation, and several Countrywide entities are named as defendants in an action filed on September 28, 2010 in New York Supreme Court. Ambac asserts claims for fraudulent inducement as well as breach of contract and seeks damages in excess of $2.2 billion, plus punitive damages.

On May 16, 2017, the First Department issued its decisions on the parties' cross-appeals of the trial court's October 22, 2015 summary judgment rulings. Ambac appealed the First Department's rulings requiring Ambac to prove all of the elements of its fraudulent inducement claim, including justifiable reliance and loss causation; restricting Ambac's sole remedy for its breach of contract claims to the repurchase protocol of cure, repurchase or substitution of any materially defective loan; and dismissing Ambac's claim for reimbursements of attorneys' fees. On June 27, 2018, the New York Court of Appeals affirmed the First Department rulings that Ambac appealed.

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On December 4, 2020, the New York Supreme Court dismissed Ambac's fraudulent inducement claim. Ambac appealed the dismissal.

Ambac v. Countrywide II

On December 30, 2014, Ambac filed a complaint in New York Supreme Court against the same defendants, claiming fraudulent inducement against Countrywide, and successor and vicarious liability against the Corporation. Ambac seeks damages in excess of $600 million, plus punitive damages.

Ambac v. Countrywide IV

On July 21, 2015, Ambac filed an action in New York Supreme Court against Countrywide asserting the same claims for fraudulent inducement that Ambac asserted in the now-dismissed Ambac v. Countrywide III. The complaint seeks damages in excess of $350 million, plus punitive damages. On December 8, 2020, the New York Supreme Court dismissed Ambac's complaint. Ambac appealed the dismissal.

Ambac v. First Franklin

On April 16, 2012, Ambac filed an action against BANA, First Franklin and various Merrill Lynch entities, including Merrill Lynch, Pierce, Fenner & Smith Incorporated, in New York Supreme Court relating to guaranty insurance Ambac provided on a First Franklin securitization sponsored by Merrill Lynch. The complaint alleges fraudulent inducement and breach of contract, including breach of contract claims against BANA based upon its servicing of the loans in the securitization. Ambac seeks as damages hundreds of millions of dollars that Ambac alleges it has paid or will pay in claims.

Deposit Insurance Assessment

On January 9, 2017, the FDIC filed suit against BANA in the U.S. District Court for the District of Columbia 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 U.S. District Court for the District of Columbia denied BANA's partial motion to dismiss certain of the FDIC's claims.

LIBOR, Other Reference Rates, Foreign Exchange (FX) and Bond Trading Matters

Government authorities in the U.S. and various international jurisdictions continue to conduct investigations of, to make inquiries of, and to pursue proceedings against, the Corporation and its subsidiaries regarding FX and other reference rates as well as government, sovereign, supranational and agency bonds in connection with conduct and systems and controls. The Corporation is cooperating with these inquiries and investigations, and responding to the proceedings.

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.

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 and/or personal jurisdiction. Plaintiffs whose antitrust claims were dismissed by the District Court are pursuing appeals in the Second Circuit. 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. The U.S. Court of Appeals for the Second Circuit subsequently denied a petition filed by the defendants for interlocutory appeal of that ruling.

U.S. Bank - Harborview and SURF/OWNIT Repurchase Litigation

Beginning in 2011, U.S. Bank, National Association (U.S. Bank), as trustee for the HarborView Mortgage Loan Trust 2005-10 and various SURF/OWNIT RMBS trusts filed complaints against the Corporation, Countrywide entities, Merrill Lynch entities and other affiliates in New York Supreme Court alleging breaches of representations and warranties. The defendants and certain certificate-holders in the trusts agreed to settle the respective matters in amounts not material to the Corporation, subject to acceptance by U.S. Bank. The litigations have been stayed pending finalization of the settlements.

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NOTE 13 Shareholders' Equity

Common Stock

Declared Quarterly Cash Dividends on Common Stock [1]

Declaration Date	Record Date	Payment Date	Dividend Per Share
January 19, 2021	March 5, 2021	March 26, 2021	$ 0.18
October 21, 2020	December 4, 2020	December 24, 2020	0.18
July 22, 2020	September 4, 2020	September 25, 2020	0.18
April 22, 2020	June 5, 2020	June 26, 2020	0.18
January 29, 2020	March 6, 2020	March 27, 2020	0.18

[1] In 2020, and through February 24, 2021.

The cash dividends paid per share of common stock were $0.72 $0.66 and $0.54 for 2020, 2019 and 2018, respectively.

The following table summarizes common stock repurchases during 2020, 2019 and 2018.

Common Stock Repurchase Summary

(in millions)	2020	2019	2018
Total share repurchases, including CCAR capital plan repurchases	**227**	956	676
Purchase price of shares repurchased and retired			
CCAR capital plan repurchases	**$ 7,025**	$25,644	$16,754
Other authorized repurchases	**—**	2,500	3,340
Total shares repurchased	**$ 7,025**	$28,144	$20,094

During 2020, the Board of Governors of the Federal Reserve System (Federal Reserve) announced that due to economic uncertainty resulting from COVID-19, all large banks would be required to suspend share repurchase programs in the third and fourth quarters of 2020, except for repurchases to offset shares awarded under equity-based compensation plans, and to limit dividends to existing rates that do not exceed the average of the last four quarters' net income.

The Federal Reserve's directives regarding share repurchases aligned with the Corporation's decision to voluntarily suspend repurchases during the first half of 2020. The suspension of the Corporation's repurchases did not include repurchases to offset shares awarded under its equity-based compensation plans.

During 2020, the Corporation repurchased and retired 227 million shares of common stock, which reduced shareholders' equity by $7.0 billion.

During 2020, in connection with employee stock plans, the Corporation issued 66 million shares of its common stock and, to satisfy tax withholding obligations, repurchased 26 million shares of its common stock. At December 31, 2020, the Corporation had reserved 513 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 $1.4 billion, $1.4 billion and $1.5 billion for 2020, 2019 and 2018, respectively.

On January 24, 2020, the Corporation issued 44,000 shares of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series MM for $1.1 billion. Dividends are paid semi-annually during the fixed-rate period, then quarterly during the floating-rate period. The Series MM 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 October 29, 2020, the Corporation issued 44,000 shares of 4.375% Non-Cumulative Preferred Stock, Series NN for $1.1 billion, with quarterly dividend payments commencing in February 2021. The Series NN 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 28, 2021, the Corporation issued 36,000 shares of 4.125% Non-Cumulative Preferred Stock, Series PP for $915 million, with quarterly dividends commencing in May 2021. The Series PP 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.

In 2020, the Corporation fully redeemed Series Y preferred stock for $1.1 billion. Additionally, on January 29, 2021, the Corporation fully redeemed Series CC preferred stock for $1.1 billion.

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, G and T 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.

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The table below presents a summary of perpetual preferred stock outstanding at December 31, 2020.

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)	Annual Dividend	Redemption Period [1]
Series B	7% Cumulative Redeemable	June 1997	7,110	$ 100	$ 1	7.00 %	$ 7	$ —	n/a
Series E [2]	Floating Rate Non-Cumulative	November 2006	12,691	25,000	317	3-mo. LIBOR + 35 bps [3]	1.02	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 [3]	4,066.67	6	On or after March 15, 2012
Series G	Adjustable Rate Non-Cumulative	March 2012	4,926	100,000	493	3-mo. LIBOR + 40 bps [3]	4,066.67	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 T	6% Non-cumulative	September 2011	354	100,000	35	6.00 %	6,000.00	2	After May 7, 2019
Series U [4]	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 [4]	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 [4]	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 [4]	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 CC [2]	6.200% Non-Cumulative	January 2016	44,000	25,000	1,100	6.200 %	1.55	68	On or after January 29, 2021
Series DD [4]	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 EE [2]	6.000% Non-Cumulative	April 2016	36,000	25,000	900	6.000 %	1.50	54	On or after April 25, 2021
Series FF [4]	Fixed-to-Floating Rate Non-Cumulative	March 2018	94,000	25,000	2,350	5.875% to, but excluding, 3/15/28; 3-mo. LIBOR + 293.1 bps thereafter	58.75	138	On or after March 15, 2028
Series GG [2]	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 [2]	5.875% Non-Cumulative	July 2018	34,160	25,000	854	5.875 %	1.47	50	On or after July 24, 2023
Series JJ [4]	Fixed-to-Floating Rate Non-Cumulative	June 2019	40,000	25,000	1,000	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 [2]	5.375% Non-Cumulative	June 2019	55,900	25,000	1,398	5.375 %	1.34	75	On or after June 25, 2024
Series LL [2]	5.000% Non-Cumulative	September 2019	52,400	25,000	1,310	5.000 %	1.25	66	On or after September 17, 2024
Series MM [4]	Fixed-to-Floating Rate Non-Cumulative	January 2020	44,000	25,000	1,100	4.300 %	43.48	48	On or after January 28, 2025
Series NN [2]	4.375% Non-Cumulative	October 2020	44,000	25,000	1,100	4.375 %	0.29	13	On or after November 3, 2025
Series 1 [5]	Floating Rate Non-Cumulative	November 2004	3,275	30,000	98	3-mo. LIBOR + 75 bps [6]	0.75	3	On or after November 28, 2009
Series 2 [5]	Floating Rate Non-Cumulative	March 2005	9,967	30,000	299	3-mo. LIBOR + 65 bps [6]	0.76	10	On or after November 28, 2009
Series 4 [5]	Floating Rate Non-Cumulative	November 2005	7,010	30,000	210	3-mo. LIBOR + 75 bps [3]	1.02	9	On or after November 28, 2010
Series 5 [5]	Floating Rate Non-Cumulative	March 2007	14,056	30,000	422	3-mo. LIBOR + 50 bps [3]	1.02	17	On or after May 21, 2012
Issuance costs and certain adjustments					(348)				
Total			**3,931,440**		**$ 24,510**				

[1] 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.
[2] 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.
[3] Subject to 4.00% minimum rate per annum.
[4] 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.
[5] 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.
[6] Subject to 3.00% minimum rate per annum.
n/a = not applicable

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NOTE 14 Accumulated Other Comprehensive Income (Loss)

The table below presents the changes in accumulated OCI after-tax for 2020, 2019 and 2018.

(Dollars in millions)	Debt Securities	Debit Valuation Adjustments	Derivatives	Employee Benefit Plans	Foreign Currency	Total
Balance, December 31, 2017	$ (1,206)	$ (1,060)	$ (831)	$ (3,192)	$ (793)	$ (7,082)
Accounting change related to certain tax effects	(393)	(220)	(189)	(707)	239	(1,270)
Cumulative adjustment for hedge accounting change	—	—	57	—	—	57
Net change	(3,953)	749	(53)	(405)	(254)	(3,916)
Balance, December 31, 2018	$ (5,552)	$ (531)	$ (1,016)	$ (4,304)	$ (808)	$ (12,211)
Net change	5,875	(963)	616	136	(86)	5,578
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)**

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 2020, 2019 and 2018.

	Pretax	Tax effect	After-tax	Pretax	Tax effect	After-tax	Pretax	Tax effect	After-tax
(Dollars in millions)		**2020**			2019			2018	
Debt securities:									
Net increase (decrease) in fair value	**$ 6,819**	**$ (1,712)**	**$ 5,107**	$ 8,020	$ (2,000)	$ 6,020	$ (5,189)	$ 1,329	$ (3,860)
Net realized (gains) reclassified into earnings [1]	**(411)**	**103**	**(308)**	(193)	48	(145)	(123)	30	(93)
Net change	**6,408**	**(1,609)**	**4,799**	7,827	(1,952)	5,875	(5,312)	1,359	(3,953)
Debit valuation adjustments:									
Net increase (decrease) in fair value	**(669)**	**156**	**(513)**	(1,276)	289	(987)	952	(224)	728
Net realized losses reclassified into earnings [1]	**19**	**(4)**	**15**	18	6	24	26	(5)	21
Net change	**(650)**	**152**	**(498)**	(1,258)	295	(963)	978	(229)	749
Derivatives:									
Net increase (decrease) in fair value	**1,098**	**(268)**	**830**	692	(156)	536	(232)	74	(158)
Reclassifications into earnings:									
Net interest income	**6**	**(1)**	**5**	104	(26)	78	165	(40)	125
Compensation and benefits expense	**(12)**	**3**	**(9)**	2	—	2	(27)	7	(20)
Net realized (gains) losses reclassified into earnings	**(6)**	**2**	**(4)**	106	(26)	80	138	(33)	105
Net change	**1,092**	**(266)**	**826**	798	(182)	616	(94)	41	(53)
Employee benefit plans:									
Net increase (decrease) in fair value	**(381)**	**80**	**(301)**	41	(21)	20	(703)	164	(539)
Net actuarial losses and other reclassified into earnings [2]	**261**	**(63)**	**198**	150	(36)	114	171	(46)	125
Settlements, curtailments and other	**5**	**—**	**5**	3	(1)	2	11	(2)	9
Net change	**(115)**	**17**	**(98)**	194	(58)	136	(521)	116	(405)
Foreign currency:									
Net (decrease) in fair value	**(251)**	**199**	**(52)**	(13)	(52)	(65)	(8)	(195)	(203)
Net realized (gains) reclassified into earnings [1]	**(1)**	**1**	**—**	(110)	89	(21)	(149)	98	(51)
Net change	**(252)**	**200**	**(52)**	(123)	37	(86)	(157)	(97)	(254)
Total other comprehensive income (loss)	**$ 6,483**	**$ (1,506)**	**$ 4,977**	$ 7,438	$ (1,860)	$ 5,578	$ (5,106)	$ 1,190	$ (3,916)

[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 2020, 2019 and 2018 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)	**2020**	2019	2018
Earnings per common share			
Net income	**$ 17,894**	$ 27,430	$ 28,147
Preferred stock dividends	**(1,421)**	(1,432)	(1,451)
Net income applicable to common shareholders	**$ 16,473**	$ 25,998	$ 26,696
Average common shares issued and outstanding	**8,753.2**	9,390.5	10,096.5
Earnings per common share	**$ 1.88**	$ 2.77	$ 2.64
Diluted earnings per common share			
Net income applicable to common shareholders	**$ 16,473**	$ 25,998	$ 26,696
Average common shares issued and outstanding	**8,753.2**	9,390.5	10,096.5
Dilutive potential common shares [1]	**43.7**	52.4	140.4
Total diluted average common shares issued and outstanding	**8,796.9**	9,442.9	10,236.9
Diluted earnings per common share	**$ 1.87**	$ 2.75	$ 2.61

[1] Includes incremental dilutive shares from RSUs, restricted stock and warrants.

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For 2020, 2019 and 2018, 62 million 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. For 2018, average options to purchase four million shares of common stock were outstanding but not included in the computation of EPS because the result would have been antidilutive under the treasury stock method. For 2019 and 2018, average warrants to purchase three million and 136 million shares of common stock, respectively, were included in the diluted EPS calculation under the treasury stock method. Substantially all of these warrants were exercised on or before their expiration date of January 16, 2019.

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 following table presents capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2020 and 2019 for the Corporation and BANA.

Regulatory Capital under Basel 3

	Bank of America Corporation			Bank of America, N.A.		
	Standardized Approach [1, 2]	Advanced Approaches [1]	Regulatory Minimum [3]	Standardized Approach [1, 2]	Advanced Approaches [1]	Regulatory Minimum [4]
(Dollars in millions, except as noted)	December 31, 2020					
Risk-based capital metrics:						
Common equity tier 1 capital	$ 176,660	$ 176,660		$ 164,593	$ 164,593	
Tier 1 capital	200,096	200,096		164,593	164,593	
Total capital [5]	237,936	227,685		181,370	170,922	
Risk-weighted assets (in billions)	1,480	1,371		1,221	1,014	
Common equity tier 1 capital ratio	11.9 %	12.9 %	9.5 %	13.5 %	16.2 %	7.0 %
Tier 1 capital ratio	13.5	14.6	11.0	13.5	16.2	8.5
Total capital ratio	16.1	16.6	13.0	14.9	16.9	10.5
Leverage-based metrics:						
Adjusted quarterly average assets (in billions) [6]	$ 2,719	$ 2,719		$ 2,143	$ 2,143	
Tier 1 leverage ratio	7.4 %	7.4 %	4.0	7.7 %	7.7 %	5.0
Supplementary leverage exposure (in billions) [7]		$ 2,786			$ 2,525	
Supplementary leverage ratio		7.2 %	5.0		6.5 %	6.0
	December 31, 2019					
Risk-based capital metrics:						
Common equity tier 1 capital	$ 166,760	$ 166,760		$ 154,626	$ 154,626	
Tier 1 capital	188,492	188,492		154,626	154,626	
Total capital [5]	221,230	213,098		166,567	158,665	
Risk-weighted assets (in billions)	1,493	1,447		1,241	991	
Common equity tier 1 capital ratio	11.2 %	11.5 %	9.5 %	12.5 %	15.6 %	7.0 %
Tier 1 capital ratio	12.6	13.0	11.0	12.5	15.6	8.5
Total capital ratio	14.8	14.7	13.0	13.4	16.0	10.5
Leverage-based metrics:						
Adjusted quarterly average assets (in billions) [6]	$ 2,374	$ 2,374		$ 1,780	$ 1,780	
Tier 1 leverage ratio	7.9 %	7.9 %	4.0	8.7 %	8.7 %	5.0
Supplementary leverage exposure (in billions)		$ 2,946			$ 2,177	
Supplementary leverage ratio		6.4 %	5.0		7.1 %	6.0

(1) As of December 31, 2020, capital ratios are calculated using the regulatory capital rule that allows a five-year transition period related to the adoption of CECL.
(2) Derivative exposure amounts are calculated using the standardized approach for measuring counterparty credit risk at December 31, 2020 and the current exposure method at December 31, 2019.
(3) The capital conservation buffer and global systemically important bank surcharge were 2.5 percent at both December 31, 2020 and 2019. At December 31, 2020, the Corporation's stress capital buffer of 2.5 percent was applied in place of the capital conservation buffer under the Standardized approach. The countercyclical capital buffer for both periods was zero. The SLR minimum includes a leverage buffer of 2.0 percent.
(4) Risk-based capital regulatory minimums at December 31, 2020 and 2019 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.
(5) 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.
(6) Reflects total average assets adjusted for certain Tier 1 capital deductions.
(7) Supplementary leverage exposure for the Corporation at December 31, 2020 reflects the temporary exclusion of U.S. Treasury securities and deposits at Federal Reserve Banks.

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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, 2020 and 2019, the Corporation and its banking entity affiliates were well capitalized.

In response to the uncertainty arising from the pandemic, the Federal Reserve required all large banks to suspend share repurchase programs during the second half of 2020, except for repurchases to offset shares awarded under equity-based compensation plans, and to limit common stock dividends to existing rates that did not exceed the average of the last four quarters' net income. In December 2020, the Federal Reserve announced that beginning in the first quarter of 2021, large banks would be permitted to pay common stock dividends at existing rates and to repurchase shares in an amount that, when combined with dividends paid, does not exceed the average of net income over the last four quarters. For more information, see *Note 13 – Shareholders' Equity*.

Other Regulatory Matters

The Federal Reserve requires the Corporation's bank subsidiaries to maintain reserve requirements based on a percentage of certain deposit liabilities. The average daily reserve balance requirements, in excess of vault cash, maintained by the Corporation with the Federal Reserve Bank were $3.8 billion for 2020, reflecting the Federal Reserve's reduction of the reserve requirement to zero in the first quarter due to COVID-19, and $14.6 billion for 2019. At December 31, 2020 and 2019, the Corporation had cash and cash equivalents in the amount of $4.9 billion and $6.3 billion, and securities with a fair value of $16.8 billion and $14.7 billion that were segregated in compliance with securities regulations. Cash held on deposit with the Federal Reserve Bank to meet reserve requirements and cash and cash equivalents segregated in compliance with securities regulations are components of restricted cash. For more information, see *Note 10 – Federal Funds Sold or Purchased, Securities Financing Agreements, Short-term Borrowings and Restricted Cash*. In addition, at December 31, 2020 and 2019, the Corporation had cash deposited with clearing organizations of $10.9 billion and $7.6 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 2020, the Corporation received dividends of $10.3 billion from BANA and $62 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 2021, BANA can declare and pay dividends of approximately $10.3 billion to the Corporation plus an additional amount equal to its retained net profits for 2021 up to the date of any such dividend declaration. Bank of America California, N.A. can pay dividends of $198 million in 2021 plus an additional amount equal to its retained net profits for 2021 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 2020 or 2019. 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, 2020 and 2019. 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 decreases in the weighted-average discount rates in 2020 and 2019 resulted in increases to the PBO of approximately $1.9 billion and $2.2 billion at December 31, 2020 and 2019. Significant gains and losses related to changes in the PBO for 2020 and 2019 primarily resulted from changes in the discount rate.

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Pension and Postretirement Plans [1]

(Dollars in millions)	Qualified Pension Plan 2020	Qualified Pension Plan 2019	Non-U.S. Pension Plans 2020	Non-U.S. Pension Plans 2019	Nonqualified and Other Pension Plans 2020	Nonqualified and Other Pension Plans 2019	Postretirement Health and Life Plans 2020	Postretirement Health and Life Plans 2019
Fair value, January 1	**$ 20,275**	$ 18,178	**$ 2,696**	$ 2,461	**$ 2,666**	$ 2,584	**$ 199**	$ 252
Actual return on plan assets	**2,468**	3,187	**379**	273	**285**	228	**1**	5
Company contributions	**—**	—	**23**	20	**86**	91	**6**	24
Plan participant contributions	**—**	—	**1**	1	**—**	—	**110**	103
Settlements and curtailments	**—**	—	**(61)**	(42)	**—**	—	**—**	—
Benefits paid	**(967)**	(1,090)	**(57)**	(108)	**(248)**	(237)	**(174)**	(185)
Federal subsidy on benefits paid	**n/a**	n/a	**n/a**	n/a	**n/a**	n/a	**1**	—
Foreign currency exchange rate changes	**n/a**	n/a	**97**	91	**n/a**	n/a	**n/a**	n/a
Fair value, December 31	**$ 21,776**	$ 20,275	**$ 3,078**	$ 2,696	**$ 2,789**	$ 2,666	**$ 143**	$ 199
Change in projected benefit obligation								
Projected benefit obligation, January 1	**$ 15,361**	$ 14,144	**$ 2,887**	$ 2,589	**$ 2,919**	$ 2,779	**$ 989**	$ 928
Service cost	**—**	—	**20**	17	**1**	1	**5**	5
Interest cost	**500**	593	**49**	65	**90**	113	**32**	38
Plan participant contributions	**—**	—	**1**	1	**—**	—	**110**	103
Plan amendments	**—**	—	**3**	2	**—**	—	**—**	—
Settlements and curtailments	**—**	—	**(61)**	(42)	**—**	—	**—**	—
Actuarial loss	**1,533**	1,714	**396**	288	**243**	263	**43**	99
Benefits paid	**(967)**	(1,090)	**(57)**	(108)	**(248)**	(237)	**(173)**	(185)
Federal subsidy on benefits paid	**n/a**	n/a	**n/a**	n/a	**n/a**	n/a	**1**	—
Foreign currency exchange rate changes	**n/a**	n/a	**102**	75	**n/a**	n/a	**—**	1
Projected benefit obligation, December 31	**$ 16,427**	$ 15,361	**$ 3,340**	$ 2,887	**$ 3,005**	$ 2,919	**$ 1,007**	$ 989
Amounts recognized on Consolidated Balance Sheet								
Other assets	**$ 5,349**	$ 4,914	**$ 428**	$ 364	**$ 812**	$ 733	**$ —**	$ —
Accrued expenses and other liabilities	**—**	—	**(690)**	(555)	**(1,028)**	(986)	**(864)**	(790)
Net amount recognized, December 31	**$ 5,349**	$ 4,914	**$ (262)**	$ (191)	**$ (216)**	$ (253)	**$ (864)**	$ (790)
Funded status, December 31								
Accumulated benefit obligation	**$ 16,427**	$ 15,361	**$ 3,253**	$ 2,841	**$ 3,005**	$ 2,919	**n/a**	n/a
Overfunded (unfunded) status of ABO	**5,349**	4,914	**(175)**	(145)	**(216)**	(253)	**n/a**	n/a
Provision for future salaries	**—**	—	**87**	46	**—**	—	**n/a**	n/a
Projected benefit obligation	**16,427**	15,361	**3,340**	2,887	**3,005**	2,919	**$ 1,007**	$ 989
Weighted-average assumptions, December 31								
Discount rate	**2.57 %**	3.32 %	**1.37 %**	1.81 %	**2.33 %**	3.20 %	**2.48 %**	3.27 %
Rate of compensation increase	**n/a**	n/a	**4.11**	4.10	**4.00**	4.00	**n/a**	n/a
Interest-crediting rate	**5.02 %**	5.06 %	**1.58**	1.53	**4.49**	4.52	**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 2021 is $29 million, $93 million and $14 million, respectively. The Corporation does not expect to make a contribution to the Qualified Pension Plan in 2021. 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, 2020 and 2019 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 2020	Non-U.S. Pension Plans 2019	Nonqualified and Other Pension Plans 2020	Nonqualified and Other Pension Plans 2019
PBO	**$ 900**	$ 744	**$ 1,028**	$ 988
ABO	**841**	720	**1,028**	988
Fair value of plan assets	**211**	191	**1**	1

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Components of Net Periodic Benefit Cost

(Dollars in millions)	Qualified Pension Plan 2020	2019	2018	Non-U.S. Pension Plans 2020	2019	2018
Components of net periodic benefit cost (income)						
Service cost	**$ —**	$ —	$ —	**$ 20**	$ 17	$ 19
Interest cost	**500**	593	563	**49**	65	65
Expected return on plan assets	**(1,154)**	(1,088)	(1,136)	**(66)**	(99)	(126)
Amortization of net actuarial loss	**173**	135	147	**9**	6	10
Other	**—**	—	—	**8**	4	12
Net periodic benefit cost (income)	**$ (481)**	$ (360)	$ (426)	**$ 20**	$ (7)	$ (20)
Weighted-average assumptions used to determine net cost for years ended December 31						
Discount rate	**3.32 %**	4.32 %	3.68 %	**1.81 %**	2.60 %	2.39 %
Expected return on plan assets	**6.00**	6.00	6.00	**2.57**	4.13	4.37
Rate of compensation increase	**n/a**	n/a	n/a	**4.10**	4.49	4.31

(Dollars in millions)	Nonqualified and Other Pension Plans 2020	2019	2018	Postretirement Health and Life Plans 2020	2019	2018
Components of net periodic benefit cost (income)						
Service cost	**$ 1**	$ 1	$ 1	**$ 5**	$ 5	$ 6
Interest cost	**90**	113	105	**32**	38	36
Expected return on plan assets	**(71)**	(95)	(84)	**(4)**	(5)	(6)
Amortization of net actuarial loss (gain)	**50**	34	43	**29**	(24)	(27)
Other	**—**	—	—	**(2)**	(2)	(3)
Net periodic benefit cost (income)	**$ 70**	$ 53	$ 65	**$ 60**	$ 12	$ 6
Weighted-average assumptions used to determine net cost for years ended December 31						
Discount rate	**3.20 %**	4.26 %	3.58 %	**3.27 %**	4.25 %	3.58 %
Expected return on plan assets	**2.77**	3.73	3.19	**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 6.25 percent for 2021, reducing in steps to 5.00 percent in 2026 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 2020.

Pretax Amounts included in Accumulated OCI and OCI

(Dollars in millions)	Qualified Pension Plan 2020	2019	Non-U.S. Pension Plans 2020	2019	Nonqualified and Other Pension Plans 2020	2019	Postretirement Health and Life Plans 2020	2019	Total 2020	2019
Net actuarial loss (gain)	**$ 3,912**	$ 3,865	**$ 628**	$ 559	**$ 987**	$ 1,008	**$ 66**	$ 48	**$ 5,593**	$ 5,480
Prior service cost (credits)	**—**	—	**18**	18	**—**	—	**(4)**	(6)	**14**	12
Amounts recognized in accumulated OCI	**$ 3,912**	$ 3,865	**$ 646**	$ 577	**$ 987**	$ 1,008	**$ 62**	$ 42	**$ 5,607**	$ 5,492
Current year actuarial loss (gain)	**$ 219**	$ (385)	**$ 79**	$ 110	**$ 29**	$ 130	**$ 47**	$ 99	**$ 374**	$ (46)
Amortization of actuarial gain (loss) and prior service cost	**(173)**	(135)	**(12)**	(7)	**(50)**	(34)	**(27)**	26	**(262)**	(150)
Current year prior service cost (credit)	**—**	—	**3**	2	**—**	—	**—**	—	**3**	2
Amounts recognized in OCI	**$ 46**	$ (520)	**$ 70**	$ 105	**$ (21)**	$ 96	**$ 20**	$ 125	**$ 115**	$ (194)

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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 2021 by asset category for the Qualified Pension Plan, Non-U.S. Pension Plans, and Nonqualified and Other Pension Plans are presented in the following table. Equity securities for the Qualified Pension Plan include common stock of the Corporation in the amounts of $274 million (1.26 percent of total plan assets) and $315 million (1.55 percent of total plan assets) at December 31, 2020 and 2019.

2021 Target Allocation

	Percentage		
Asset Category	Qualified Pension Plan	Non-U.S. Pension Plans	Nonqualified and Other Pension Plans
Equity securities	15 - 50%	0 - 25%	0 - 5%
Debt securities	45 - 80%	40 - 70%	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, 2020 and 2019 are summarized in the Fair Value Measurements table.

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Fair Value Measurements

(Dollars in millions)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
	December 31, 2020				December 31, 2019			
Cash and short-term investments								
Money market and interest-bearing cash	**$ 1,380**	**$ —**	**$ —**	**$ 1,380**	$ 1,426	$ —	$ —	$ 1,426
Cash and cash equivalent commingled/mutual funds	**—**	**383**	**—**	**383**	—	250	—	250
Fixed income								
U.S. government and agency securities	**4,590**	**1,238**	**7**	**5,835**	4,403	890	8	5,301
Corporate debt securities	**—**	**5,021**	**—**	**5,021**	—	3,676	—	3,676
Asset-backed securities	**—**	**1,967**	**—**	**1,967**	—	2,684	—	2,684
Non-U.S. debt securities	**1,021**	**1,122**	**—**	**2,143**	748	1,015	—	1,763
Fixed income commingled/mutual funds	**1,224**	**1,319**	**—**	**2,543**	804	1,439	—	2,243
Equity								
Common and preferred equity securities	**4,438**	**—**	**—**	**4,438**	4,655	—	—	4,655
Equity commingled/mutual funds	**134**	**1,542**	**—**	**1,676**	147	1,355	—	1,502
Public real estate investment trusts	**73**	**—**	**—**	**73**	91	—	—	91
Real estate								
Real estate commingled/mutual funds	**—**	**20**	**943**	**963**	—	18	927	945
Limited partnerships	**—**	**184**	**83**	**267**	—	173	90	263
Other investments [1]	**5**	**401**	**691**	**1,097**	11	390	636	1,037
Total plan investment assets, at fair value	**$ 12,865**	**$ 13,197**	**$ 1,724**	**$ 27,786**	$ 12,285	$ 11,890	$ 1,661	$ 25,836

[1] Other investments include commodity and balanced funds of $246 million and $233 million, insurance annuity contracts of $664 million and $614 million and other various investments of $187 million and $190 million at December 31, 2020 and 2019.

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 2020, 2019 and 2018.

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
		2020		
Fixed income				
U.S. government and agency securities	**$ 8**	**$ —**	**$ (1)**	**$ 7**
Real estate				
Real estate commingled/mutual funds	**927**	**(4)**	**20**	**943**
Limited partnerships	**90**	**2**	**(9)**	**83**
Other investments	**636**	**6**	**49**	**691**
Total	**$ 1,661**	**$ 4**	**$ 59**	**$ 1,724**
		2019		
Fixed income				
U.S. government and agency securities	$ 9	$ —	$ (1)	$ 8
Real estate				
Private real estate	5	—	(5)	—
Real estate commingled/mutual funds	885	33	9	927
Limited partnerships	82	—	8	90
Other investments	588	6	42	636
Total	$ 1,569	$ 39	$ 53	$ 1,661
		2018		
Fixed income				
U.S. government and agency securities	$ 9	$ —	$ —	$ 9
Real estate				
Private real estate	93	(7)	(81)	5
Real estate commingled/mutual funds	831	52	2	885
Limited partnerships	85	(12)	9	82
Other investments	74	—	514	588
Total	$ 1,092	$ 33	$ 444	$ 1,569

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.

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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]
2021	$ 856	$ 127	$ 244	$ 79
2022	943	134	245	76
2023	939	143	229	74
2024	943	135	224	70
2025	934	140	221	67
2026 - 2030	4,474	675	977	290

[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, $1.0 billion and $1.0 billion in 2020, 2019 and 2018 related to the qualified defined contribution plans. At both December 31, 2020 and 2019, 189 million shares of the Corporation's common stock were held by these plans. Payments to the plans for dividends on common stock were $138 million, $133 million and $115 million in 2020, 2019 and 2018, 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 Key Employee Equity Plan (KEEP). Under this plan, 600 million shares of the Corporation's common stock are authorized to be used for grants of awards.

During 2020 and 2019, the Corporation granted 86 million and 94 million RSU awards to certain employees under the KEEP. 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. Of the RSUs granted in 2020 and 2019, 61 million and 71 million will vest predominantly over three years with most vesting occurring 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. For RSUs granted to employees who are retirement eligible, the awards 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. Additionally, 25 million and 23 million of the RSUs granted in 2020 and 2019 will vest predominantly over four years with most vesting occurring in one-fourth increments on each of the first four 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, based on the grant-date fair value of the shares.

The compensation cost for the stock-based plans was $2.1 billion, $2.1 billion and $1.8 billion, and the related income tax benefit was $505 million, $511 million and $433 million for 2020, 2019 and 2018, respectively. At December 31, 2020, there was an estimated $2.0 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 2.2 years.

Restricted Stock and Restricted Stock Units

The total fair value of restricted stock and restricted stock units vested in 2020, 2019 and 2018 was $2.3 billion, $2.6 billion and $2.3 billion, respectively. The table below presents the status at December 31, 2020 of the share-settled restricted stock and restricted stock units and changes during 2020.

Stock-settled Restricted Stock and Restricted Stock Units

	Shares/Units	Weighted-average Grant Date Fair Value
Outstanding at January 1, 2020	157,909,315	$ 27.93
Granted	83,604,782	33.01
Vested	(68,578,284)	27.38
Canceled	(4,982,584)	30.88
Outstanding at December 31, 2020	**167,953,229**	**30.60**

Cash-settled Restricted Units

At December 31, 2020, approximately two million cash-settled restricted units remain outstanding. In 2020, 2019 and 2018, the amount of cash paid to settle the RSUs that vested was $81 million, $84 million and $1.3 billion, respectively.

NOTE 19 Income Taxes

The components of income tax expense for 2020, 2019 and 2018 are presented in the table below.

Income Tax Expense

(Dollars in millions)	2020	2019	2018
Current income tax expense			
U.S. federal	**$ 1,092**	$ 1,136	$ 816
U.S. state and local	**1,076**	901	1,377
Non-U.S.	**670**	852	1,203
Total current expense	**2,838**	2,889	3,396
Deferred income tax expense			
U.S. federal	**(799)**	2,001	2,579
U.S. state and local	**(233)**	223	240
Non-U.S.	**(705)**	211	222
Total deferred expense	**(1,737)**	2,435	3,041
Total income tax expense	**$ 1,101**	$ 5,324	$ 6,437

Total income tax expense does not reflect the tax effects of items that are included in OCI each period. For more

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information, see *Note 14 – Accumulated Other Comprehensive Income (Loss)*. Other tax effects included in OCI each period resulted in an expense of $1.5 billion and $1.9 billion in 2020 and 2019 and a benefit of $1.2 billion in 2018.

Income tax expense for 2020, 2019 and 2018 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 2020, 2019 and 2018. 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 2020, 2019 and 2018 are presented in the table below.

Reconciliation of Income Tax Expense

(Dollars in millions)	Amount	Percent	Amount	Percent	Amount	Percent
	2020		2019		2018	
Expected U.S. federal income tax expense	$ 3,989	21.0 %	$ 6,878	21.0 %	$ 7,263	21.0 %
Increase (decrease) in taxes resulting from:						
State tax expense, net of federal benefit	728	3.8	1,283	3.9	1,367	4.0
Affordable housing/energy/other credits	(2,869)	(15.1)	(2,365)	(7.2)	(1,888)	(5.5)
Tax law changes	(699)	(3.7)	—	—	—	—
Tax-exempt income, including dividends	(346)	(1.8)	(433)	(1.3)	(413)	(1.2)
Share-based compensation	(129)	(0.7)	(225)	(0.7)	(257)	(0.7)
Changes in prior-period UTBs, including interest	(41)	(0.2)	(613)	(1.9)	144	0.4
Nondeductible expenses	324	1.7	290	0.9	302	0.9
Rate differential on non-U.S. earnings	218	1.1	504	1.5	98	0.3
Other	(74)	(0.3)	5	0.1	(179)	(0.6)
Total income tax expense (benefit)	$ 1,101	5.8 %	$ 5,324	16.3 %	$ 6,437	18.6 %

The reconciliation of the beginning unrecognized tax benefits (UTB) balance to the ending balance is presented in the following table.

Reconciliation of the Change in Unrecognized Tax Benefits

(Dollars in millions)	2020	2019	2018
Balance, January 1	$ 1,175	$ 2,197	$ 1,773
Increases related to positions taken during the current year	238	238	395
Increases related to positions taken during prior years [1]	99	401	406
Decreases related to positions taken during prior years [1]	(172)	(1,102)	(371)
Settlements	—	(541)	(6)
Expiration of statute of limitations	—	(18)	—
Balance, December 31	$ 1,340	$ 1,175	$ 2,197

[1] The sum of the positions taken during prior years differs from the $(41) million, $(613) million and $144 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, 2020, 2019 and 2018, the balance of the Corporation's UTBs which would, if recognized, affect the Corporation's effective tax rate was $976 million, $814 million and $1.6 billion, 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 $166 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 interest expense of $9 million in 2020, an interest benefit of $19 million in 2019 and interest expense of $43 million in 2018. At December 31, 2020 and 2019, the Corporation's accrual for interest and penalties that related to income taxes, net of taxes and remittances, was $130 million and $147 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 following table summarizes the status of examinations by major jurisdiction for the Corporation and various subsidiaries at December 31, 2020.

Tax Examination Status

	Years under Examination [1]	Status at December 31 2020
United States	2017-2020	Field Examination
California	2012-2017	Field Examination
New York	2016-2018	Field Examination
United Kingdom [2]	2018	Field Examination

[1] All tax years subsequent to the years shown remain subject to examination.
[2] Field examination for tax year 2019 to begin in 2021.

Significant components of the Corporation's net deferred tax assets and liabilities at December 31, 2020 and 2019 are presented in the following table.

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Deferred Tax Assets and Liabilities

(Dollars in millions)	December 31 2020	2019
Deferred tax assets		
Net operating loss carryforwards	**$ 7,717**	$ 7,417
Allowance for credit losses	**4,701**	2,354
Security, loan and debt valuations	**2,571**	1,860
Lease liability	**2,400**	2,321
Employee compensation and retirement benefits	**1,582**	1,622
Accrued expenses	**1,481**	1,719
Credit carryforwards	**484**	183
Other	**1,412**	1,203
Gross deferred tax assets	**22,348**	18,679
Valuation allowance	**(2,346)**	(1,989)
Total deferred tax assets, net of valuation allowance	**20,002**	16,690
Deferred tax liabilities		
Equipment lease financing	**3,101**	2,933
Right-to-use asset	**2,296**	2,246
Fixed assets	**1,957**	1,505
ESG-related tax credit investments	**1,930**	1,577
Available-for-sale securities	**1,701**	100
Other	**1,570**	1,885
Gross deferred tax liabilities	**12,555**	10,246
Net deferred tax assets	**$ 7,447**	$ 6,444

On January 1, 2020, the Corporation adopted the CECL accounting standard. The transition adjustment included a tax benefit of $760 million in retained earnings, which increased deferred tax assets by a corresponding amount.

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, 2020.

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.S.	$ 36	$ —	**$ 36**	After 2028
Net operating losses - U.K. [1]	5,896	—	**5,896**	None
Net operating losses - other non-U.S.	506	(441)	**65**	Various
Net operating losses - U.S. states [2]	1,279	(579)	**700**	Various
Foreign tax credits	484	(484)	**—**	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 $1.6 billion and $733 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, 2020, 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 2020, 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

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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.

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Recurring Fair Value

Assets and liabilities carried at fair value on a recurring basis at December 31, 2020 and 2019, including financial instruments that the Corporation accounts for under the fair value option, are summarized in the following tables.

	December 31, 2020				
	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	$ 1,649	$ —	$ —	$ —	$ 1,649
Federal funds sold and securities borrowed or purchased under agreements to resell	—	108,856	—	—	108,856
Trading account assets:					
U.S. Treasury and agency securities	45,219	3,051	—	—	48,270
Corporate securities, trading loans and other	—	22,817	1,359	—	24,176
Equity securities	36,372	31,372	227	—	67,971
Non-U.S. sovereign debt	5,753	20,884	354	—	26,991
Mortgage trading loans, MBS and ABS:					
U.S. government-sponsored agency guaranteed [2]	—	21,566	75	—	21,641
Mortgage trading loans, ABS and other MBS	—	8,440	1,365	—	9,805
Total trading account assets [3]	87,344	108,130	3,380	—	198,854
Derivative assets	15,624	416,175	2,751	(387,371)	47,179
AFS debt securities:					
U.S. Treasury and agency securities	115,266	1,114	—	—	116,380
Mortgage-backed securities:					
Agency	—	61,849	—	—	61,849
Agency-collateralized mortgage obligations	—	5,260	—	—	5,260
Non-agency residential	—	631	378	—	1,009
Commercial	—	16,491	—	—	16,491
Non-U.S. securities	—	13,999	18	—	14,017
Other taxable securities	—	2,640	71	—	2,711
Tax-exempt securities	—	16,598	176	—	16,774
Total AFS debt securities	115,266	118,582	643	—	234,491
Other debt securities carried at fair value:					
U.S. Treasury and agency securities	93	—	—	—	93
Non-agency residential MBS	—	506	267	—	773
Non-U.S. and other securities	2,619	8,625	—	—	11,244
Total other debt securities carried at fair value	2,712	9,131	267	—	12,110
Loans and leases	—	5,964	717	—	6,681
Loans held-for-sale	—	1,349	236	—	1,585
Other assets [4]	9,898	3,850	1,970	—	15,718
Total assets [5]	$ 232,493	$ 772,037	$ 9,964	$ (387,371)	$ 627,123
Liabilities					
Interest-bearing deposits in U.S. offices	$ —	$ 481	$ —	$ —	$ 481
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	135,391	—	—	135,391
Trading account liabilities:					
U.S. Treasury and agency securities	9,425	139	—	—	9,564
Equity securities	38,189	4,235	—	—	42,424
Non-U.S. sovereign debt	5,853	8,043	—	—	13,896
Corporate securities and other	—	5,420	16	—	5,436
Total trading account liabilities	53,467	17,837	16	—	71,320
Derivative liabilities	14,907	412,881	6,219	(388,481)	45,526
Short-term borrowings	—	5,874	—	—	5,874
Accrued expenses and other liabilities	12,297	4,014	—	—	16,311
Long-term debt	—	31,036	1,164	—	32,200
Total liabilities [5]	$ 80,671	$ 607,514	$ 7,399	$ (388,481)	$ 307,103

(1) Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
(2) Includes $22.2 billion of GSE obligations.
(3) Includes securities with a fair value of $16.8 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 precious metal inventories of $576 million that are accounted for at the lower of cost or net realizable value, which is the current selling price less any costs to sell.
(4) Includes MSRs of $1.0 billion which are classified as Level 3 assets.
(5) Total recurring Level 3 assets were 0.35 percent of total consolidated assets, and total recurring Level 3 liabilities were 0.29 percent of total consolidated liabilities.

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(Dollars in millions)	December 31, 2019				
	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	$ 1,000	$ —	$ —	$ —	$ 1,000
Federal funds sold and securities borrowed or purchased under agreements to resell	—	50,364	—	—	50,364
Trading account assets:					
U.S. Treasury and agency securities	49,517	4,157	—	—	53,674
Corporate securities, trading loans and other	—	25,226	1,507	—	26,733
Equity securities	53,597	32,619	239	—	86,455
Non-U.S. sovereign debt	3,965	23,854	482	—	28,301
Mortgage trading loans, MBS and ABS:					
U.S. government-sponsored agency guaranteed [2]	—	24,324	—	—	24,324
Mortgage trading loans, ABS and other MBS	—	8,786	1,553	—	10,339
Total trading account assets [3]	107,079	118,966	3,781	—	229,826
Derivative assets	14,079	328,442	2,226	(304,262)	40,485
AFS debt securities:					
U.S. Treasury and agency securities	67,332	1,196	—	—	68,528
Mortgage-backed securities:					
Agency	—	122,528	—	—	122,528
Agency-collateralized mortgage obligations	—	4,641	—	—	4,641
Non-agency residential	—	653	424	—	1,077
Commercial	—	15,021	—	—	15,021
Non-U.S. securities	—	11,989	2	—	11,991
Other taxable securities	—	3,876	65	—	3,941
Tax-exempt securities	—	17,804	108	—	17,912
Total AFS debt securities	67,332	177,708	599	—	245,639
Other debt securities carried at fair value:					
U.S. Treasury and agency securities	3	—	—	—	3
Agency MBS	—	3,003	—	—	3,003
Non-agency residential MBS	—	1,035	299	—	1,334
Non-U.S. and other securities	400	6,088	—	—	6,488
Total other debt securities carried at fair value	403	10,126	299	—	10,828
Loans and leases	—	7,642	693	—	8,335
Loans held-for-sale	—	3,334	375	—	3,709
Other assets [4]	11,782	1,376	2,360	—	15,518
Total assets [5]	$ 201,675	$ 697,958	$ 10,333	$ (304,262)	$ 605,704
Liabilities					
Interest-bearing deposits in U.S. offices	$ —	$ 508	$ —	$ —	$ 508
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	16,008	—	—	16,008
Trading account liabilities:					
U.S. Treasury and agency securities	13,140	282	—	—	13,422
Equity securities	38,148	4,144	2	—	42,294
Non-U.S. sovereign debt	10,751	11,310	—	—	22,061
Corporate securities and other	—	5,478	15	—	5,493
Total trading account liabilities	62,039	21,214	17	—	83,270
Derivative liabilities	11,904	320,479	4,764	(298,918)	38,229
Short-term borrowings	—	3,941	—	—	3,941
Accrued expenses and other liabilities	13,927	1,507	—	—	15,434
Long-term debt	—	33,826	1,149	—	34,975
Total liabilities [5]	$ 87,870	$ 397,483	$ 5,930	$ (298,918)	$ 192,365

(1) Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
(2) Includes $26.7 billion of GSE obligations.
(3) Includes securities with a fair value of $14.7 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.
(4) Includes MSRs of $1.5 billion which are classified as Level 3 assets.
(5) Total recurring Level 3 assets were 0.42 percent of total consolidated assets, and total recurring Level 3 liabilities were 0.27 percent of total consolidated liabilities.

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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 2020, 2019 and 2018, 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]

(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, ABS and other MBS	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. securities	2	1	—	—	(1)	—	(1)	17	—	18	1
Other taxable securities	65	—	—	9	(4)	—	—	1	—	71	—
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)
Year Ended December 31, 2019											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,558	$ 105	$ —	$ 534	$(390)	$ 18	$ (578)	$ 699	$ (439)	$ 1,507	$ 29
Equity securities	276	(12)	—	38	(87)	—	(9)	79	(46)	239	(18)
Non-U.S. sovereign debt	465	46	(12)	1	—	—	(51)	39	(6)	482	47
Mortgage trading loans, ABS and other MBS	1,635	99	(2)	662	(899)	—	(175)	738	(505)	1,553	26
Total trading account assets	3,934	238	(14)	1,235	(1,376)	18	(813)	1,555	(996)	3,781	84
Net derivative assets (liabilities) [4,8]	(935)	(37)	—	298	(837)	—	(97)	147	(1,077)	(2,538)	228
AFS debt securities:											
Non-agency residential MBS	597	13	64	—	(73)	—	(40)	206	(343)	424	—
Non-U.S. securities	2	—	—	—	—	—	—	—	—	2	—
Other taxable securities	7	2	—	—	—	—	(5)	61	—	65	—
Tax-exempt securities	—	—	—	—	—	—	—	108	—	108	—
Total AFS debt securities	606	15	64	—	(73)	—	(45)	375	(343)	599	—
Other debt securities carried at fair value – Non-agency residential MBS	172	36	—	—	—	—	(17)	155	(47)	299	38
Loans and leases [5,6]	338	—	—	230	(35)	217	(57)	—	—	693	(1)
Loans held-for-sale [5,6]	542	48	(6)	12	(71)	36	(245)	59	—	375	22
Other assets [6,7]	2,932	(81)	19	—	(10)	179	(683)	5	(1)	2,360	(267)
Trading account liabilities – Equity securities	—	(2)	—	—	—	—	—	—	—	(2)	(2)
Trading account liabilities – Corporate securities and other	(18)	8	—	(1)	(3)	(1)	—	—	—	(15)	—
Long-term debt [5,8]	(817)	(59)	(64)	—	—	(40)	180	(350)	1	(1,149)	(55)

(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 - predominantly 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 - primarily other income related to MSRs; 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 $(41) million and $3 million related to financial instruments still held at December 31, 2020 and 2019.

(4) Net derivative assets (liabilities) include derivative assets of $2.8 billion and $2.2 billion and derivative liabilities of $6.2 billion and $4.8 billion at December 31, 2020 and 2019.

(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.

(8) Transfers into long-term debt include a $1.4 billion transfer in of Level 3 derivative assets to reflect the Corporation's change to present bifurcated embedded derivatives with their respective host instruments.

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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, 2018											
Trading account assets:											
Corporate securities, trading loans and other	$ 1,864	$ (32)	$ (1)	$ 436	$ (403)	$ 5	$ (568)	$ 804	$ (547)	$ 1,558	$ (117)
Equity securities	235	(17)	—	44	(11)	—	(4)	78	(49)	276	(22)
Non-U.S. sovereign debt	556	47	(44)	13	(57)	—	(30)	117	(137)	465	48
Mortgage trading loans, ABS and other MBS	1,498	148	3	585	(910)	—	(158)	705	(236)	1,635	97
Total trading account assets	4,153	146	(42)	1,078	(1,381)	5	(760)	1,704	(969)	3,934	6
Net derivative assets (liabilities) [4]	(1,714)	106	—	531	(1,179)	—	778	39	504	(935)	(116)
AFS debt securities:											
Non-agency residential MBS	—	27	(33)	—	(71)	—	(25)	774	(75)	597	—
Non-U.S. securities	25	—	(1)	—	(10)	—	(15)	3	—	2	—
Other taxable securities	509	1	(3)	—	(23)	—	(11)	60	(526)	7	—
Tax-exempt securities	469	—	—	—	—	—	(1)	1	(469)	—	—
Total AFS debt securities [5]	1,003	28	(37)	—	(104)	—	(52)	838	(1,070)	606	—
Other debt securities carried at fair value - Non-agency residential MBS	—	(18)	—	—	(8)	—	(34)	365	(133)	172	(18)
Loans and leases [6,7]	571	(16)	—	—	(134)	—	(83)	—	—	338	(9)
Loans held-for-sale [6]	690	44	(26)	71	—	1	(201)	23	(60)	542	31
Other assets [5,7,8]	2,425	414	(38)	2	(69)	96	(792)	929	(35)	2,932	149
Trading account liabilities – Corporate securities and other	(24)	11	—	9	(12)	(2)	—	—	—	(18)	(7)
Accrued expenses and other liabilities [6]	(8)	—	—	—	—	—	8	—	—	—	—
Long-term debt [6]	(1,863)	103	4	9	—	(141)	486	(262)	847	(817)	95

(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; Other debt securities carried at fair value - other income; Loans and leases - predominantly other income; Loans held-for-sale - other income; Other assets - primarily other income related to MSRs; Long-term debt - primarily 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 losses of $105 million related to financial instruments still held at December 31, 2018.
(4) Net derivative assets (liabilities) include derivative assets of $3.5 billion and derivative liabilities of $4.4 billion.
(5) Transfers out of AFS debt securities and into other assets primarily relate to the reclassifcation of certain securities.
(6) Amounts represent instruments that are accounted for under the fair value option.
(7) Issuances represent loan originations and MSRs recognized following securitizations or whole-loan sales.
(8) 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.

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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, 2020 and 2019.

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2020

(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	**$ 1,543**	Discounted cash flow, Market comparables	Yield	(3)% to 25%	6%
Trading account assets – Mortgage trading loans, ABS and other MBS	467		Prepayment speed	1% to 56% CPR	20% CPR
Loans and leases	431		Default rate	0% to 3% CDR	1% CDR
AFS debt securities – Non-agency residential	378		Price	$0 to $168	$110
Other debt securities carried at fair value – Non-agency residential	267		Loss severity	0% to 47%	18%
Instruments backed by commercial real estate assets	**$ 407**	Discounted cash flow	Yield	0% to 25%	4%
Trading account assets – Corporate securities, trading loans and other	262		Price	$0 to $100	$52
Trading account assets – Mortgage trading loans, ABS and other MBS	43				
AFS debt securities, primarily other taxable securities	89				
Loans held-for-sale	13				
Commercial loans, debt securities and other	**$ 3,066**	Discounted cash flow, Market comparables	Yield	0% to 26%	9%
Trading account assets – Corporate securities, trading loans and other	1,097		Prepayment speed	10% to 20%	14%
Trading account assets – Non-U.S. sovereign debt	354		Default rate	3% to 4%	4%
Trading account assets – Mortgage trading loans, ABS and other MBS	930		Loss severity	35% to 40%	38%
AFS debt securities – Tax-exempt securities	176		Price	$0 to $142	$66
Loans and leases	286		Long-dated equity volatilities	77%	n/a
Loans held-for-sale	223				
Other assets, primarily auction rate securities	**$ 937**	Discounted cash flow, Market comparables	Price	$10 to $97	$91
			Discount rate	8%	n/a
MSRs	**$ 1,033**	Discounted cash flow	Weighted-average life, fixed rate [5]	0 to 13 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	**$ (1,164)**	Discounted cash flow, Market comparables, Industry standard derivative pricing [3]	Yield	0% to 11%	9%
			Equity correlation	2% to 100%	64%
			Long-dated equity volatilities	7% to 64%	32%
			Price	$0 to $124	$86
			Natural gas forward price	$1/MMBtu to $4/MMBtu	$3 /MMBtu
Net derivative assets (liabilities)					
Credit derivatives	**$ (112)**	Discounted cash flow, Stochastic recovery correlation model	Yield	5%	n/a
			Upfront points	0 to 100 points	75 points
			Prepayment speed	15% to 100% CPR	22% CPR
			Default rate	2% CDR	n/a
			Credit correlation	21% to 64%	57%
			Price	$0 to $122	$69
Equity derivatives	**$ (1,904)**	Industry standard derivative pricing [3]	Equity correlation	2% to 100%	64%
			Long-dated equity volatilities	7% to 64%	32%
Commodity derivatives	**$ (1,426)**	Discounted cash flow, Industry standard derivative pricing [3]	Natural gas forward price	$1/MMBtu to $4/MMBtu	$3 /MMBtu
			Correlation	39% to 85%	73%
			Volatilities	23% to 70%	39%
Interest rate derivatives	**$ (26)**	Industry standard derivative pricing [4]	Correlation (IR/IR)	15% to 96%	34%
			Correlation (FX/IR)	0% to 46%	3%
			Long-dated inflation rates	(7)% to 84%	14%
			Long-dated inflation volatilities	0% to 1%	1%
			Interest rate volatilities	0% to 2%	1%
Total net derivative assets (liabilities)	**$ (3,468)**				

[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 179: Trading account assets – Corporate securities, trading loans and other of $1.4 billion, Trading account assets – Non-U.S. sovereign debt of $354 million, Trading account assets – Mortgage trading loans, ABS and other MBS of $1.4 billion, AFS debt securities of $643 million, Other debt securities carried at fair value - Non-agency residential of $267 million, Other assets, including MSRs, of $2.0 billion, Loans and leases of $717 million and LHFS of $236 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

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Quantitative Information about Level 3 Fair Value Measurements at December 31, 2019

(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	**$ 1,407**	Discounted cash flow, Market comparables	Yield	0% to 25%	6%
Trading account assets – Mortgage trading loans, ABS and other MBS	332		Prepayment speed	1% to 27% CPR	17% CPR
Loans and leases	281		Default rate	0% to 3% CDR	1% CDR
Loans held-for-sale	4		Loss severity	0% to 47%	14%
AFS debt securities, primarily non-agency residential	491		Price	$0 to $160	$94
Other debt securities carried at fair value - Non-agency residential	299				
Instruments backed by commercial real estate assets	**$ 303**	Discounted cash flow	Yield	0% to 30%	14%
Trading account assets – Corporate securities, trading loans and other	201		Price	$0 to $100	$55
Trading account assets – Mortgage trading loans, ABS and other MBS	85				
Loans held-for-sale	17				
Commercial loans, debt securities and other	**$ 3,798**	Discounted cash flow, Market comparables	Yield	1% to 20%	6%
Trading account assets – Corporate securities, trading loans and other	1,306		Prepayment speed	10% to 20%	13%
Trading account assets – Non-U.S. sovereign debt	482		Default rate	3% to 4%	4%
Trading account assets – Mortgage trading loans, ABS and other MBS	1,136		Loss severity	35% to 40%	38%
AFS debt securities – Tax-exempt securities	108		Price	$0 to $142	$72
Loans and leases	412		Long-dated equity volatilities	35%	n/a
Loans held-for-sale	354				
Other assets, primarily auction rate securities	**$ 815**	Discounted cash flow, Market comparables	Price	$10 to $100	$96
MSRs	**$ 1,545**	Discounted cash flow	Weighted-average life, fixed rate [5]	0 to 14 years	5 years
			Weighted-average life, variable rate [5]	0 to 9 years	3 years
			Option-adjusted spread, fixed rate	7% to 14%	9%
			Option-adjusted spread, variable rate	9% to 15%	11%
Structured liabilities					
Long-term debt	**$ (1,149)**	Discounted cash flow, Market comparables, Industry standard derivative pricing [3]	Yield	2% to 6%	5%
			Equity correlation	9% to 100%	63%
			Long-dated equity volatilities	4% to 101%	32%
			Price	$0 to $116	$74
			Natural gas forward price	$1/MMBtu to $5/MMBtu	$3/MMBtu
Net derivative assets (liabilities)					
Credit derivatives	**$ 13**	Discounted cash flow, Stochastic recovery correlation model	Yield	5%	n/a
			Upfront points	0 to 100 points	63 points
			Prepayment speed	15% to 100% CPR	22% CPR
			Default rate	1% to 4% CDR	2% CDR
			Loss severity	35%	n/a
			Price	$0 to $104	$73
Equity derivatives	**$ (1,081)**	Industry standard derivative pricing [3]	Equity correlation	9% to 100%	63%
			Long-dated equity volatilities	4% to 101%	32%
Commodity derivatives	**$ (1,357)**	Discounted cash flow, Industry standard derivative pricing [3]	Natural gas forward price	$1/MMBtu to $5/MMBtu	$3/MMBtu
			Correlation	30% to 69%	68%
			Volatilities	14% to 54%	27%
Interest rate derivatives	**$ (113)**	Industry standard derivative pricing [4]	Correlation (IR/IR)	15% to 94%	52%
			Correlation (FX/IR)	0% to 46%	2%
			Long-dated inflation rates	(23)% to 56%	16%
			Long-dated inflation volatilities	0% to 1%	1%
Total net derivative assets (liabilities)	**$ (2,538)**				

[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 180: Trading account assets – Corporate securities, trading loans and other of $1.5 billion, Trading account assets – Non-U.S. sovereign debt of $482 million, Trading account assets – Mortgage trading loans, ABS and other MBS of $1.6 billion, AFS debt securities of $599 million, Other debt securities carried at fair value - Non-agency residential of $299 million, Other assets, including MSRs, of $2.4 billion, Loans and leases of $693 million and LHFS of $375 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

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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 level 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 2020, 2019 and 2018.

Assets Measured at Fair Value on a Nonrecurring Basis

(Dollars in millions)	December 31, 2020 Level 2	December 31, 2020 Level 3	December 31, 2019 Level 2	December 31, 2019 Level 3
Assets				
Loans held-for-sale	**$ 1,020**	**$ 792**	$ 53	$ 102
Loans and leases [1]	**—**	**301**	—	257
Foreclosed properties [2, 3]	**—**	**17**	—	17
Other assets	**323**	**576**	178	646

	Gains (Losses) 2020	2019	2018
Assets			
Loans held-for-sale	**$ (79)**	$ (14)	$ (18)
Loans and leases [1]	**(73)**	(81)	(202)
Foreclosed properties	**(6)**	(9)	(24)
Other assets	**(98)**	(2,145)	(64)

(1) Includes $30 million, $36 million and $83 million of losses on loans that were written down to a collateral value of zero during 2020, 2019 and 2018, 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 $119 million and $260 million of properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans) at December 31, 2020 and 2019.

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The table below presents information about significant unobservable inputs utilized in the Corporation's nonrecurring Level 3 fair value measurements during 2020 and 2019.

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)			2020		
Loans held-for-sale	$ 792	Discounted cash flow	Price	$8 to $99	$95
Loans and leases [2]	301	Market comparables	OREO discount	13% to 59%	24%
			Costs to sell	8% to 26%	9%
Other assets [3]	576	Discounted cash flow	Revenue attrition	2% to 19%	7%
			Discount rate	11% to 14%	12%
			2019		
Loans held-for-sale	$ 102	Discounted cash flow	Price	$85 to $97	$88
Loans and leases [2]	257	Market comparables	OREO discount	13% to 59%	24%
			Costs to sell	8% to 26%	9%
Other assets [4]	640	Discounted cash flow	Customer attrition	0% to 19%	5%
			Cost to service	11% to 19%	15%

(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) The fair value of the intangible asset related to the merchant contracts received from the merchant services joint venture was measured using a discounted cash flow method for which the two key assumptions were the revenue attrition rate and the discount rate. For more information, see *Note 7 – Goodwill and Intangible Assets.*
(4) Reflects the measurement of the Corporation's merchant services equity method investment on which the Corporation recorded an impairment charge in 2019. The fair value of the merchant services joint venture was measured using a discounted cash flow method for which the two key assumptions were the customer attrition rate and the cost-to-service rate.

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 therefore 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.

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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 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, 2020 and 2019, 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 2020, 2019 and 2018.

Fair Value Option Elections

(Dollars in millions)	December 31, 2020			December 31, 2019		
	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	**$ 108,856**	**$ 108,811**	**$ 45**	$ 50,364	$ 50,318	$ 46
Loans reported as trading account assets [1]	**7,967**	**17,372**	**(9,405)**	6,989	14,703	(7,714)
Trading inventory – other	**22,790**	**n/a**	**n/a**	19,574	n/a	n/a
Consumer and commercial loans	**6,681**	**6,778**	**(97)**	8,335	8,372	(37)
Loans held-for-sale [1]	**1,585**	**2,521**	**(936)**	3,709	4,879	(1,170)
Other assets	**200**	**n/a**	**n/a**	4	n/a	n/a
Long-term deposits	**481**	**448**	**33**	508	496	12
Federal funds purchased and securities loaned or sold under agreements to repurchase	**135,391**	**135,390**	**1**	16,008	16,029	(21)
Short-term borrowings	**5,874**	**5,178**	**696**	3,941	3,930	11
Unfunded loan commitments	**99**	**n/a**	**n/a**	90	n/a	n/a
Long-term debt	**32,200**	**33,470**	**(1,270)**	34,975	35,730	(755)

[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

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Gains (Losses) Relating to Assets and Liabilities Accounted for Under the Fair Value Option

(Dollars in millions)	Market making and similar activities	Other Income	Total
		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**
		2019	
Loans reported as trading account assets	$ 203	$ —	$ 203
Trading inventory – other [1]	5,795	—	5,795
Consumer and commercial loans	92	12	104
Loans held-for-sale [2]	—	98	98
Short-term borrowings	(24)	—	(24)
Unfunded loan commitments	—	79	79
Long-term debt [3]	(1,098)	(78)	(1,176)
Other [4]	9	(27)	(18)
Total	$ 4,977	$ 84	$ 5,061
		2018	
Loans reported as trading account assets	$ 8	$ —	$ 8
Trading inventory – other [1]	1,750	—	1,750
Consumer and commercial loans	(422)	(53)	(475)
Loans held-for-sale [2]	1	24	25
Short-term borrowings	2	—	2
Unfunded loan commitments	—	(49)	(49)
Long-term debt [3]	2,157	(93)	2,064
Other [4]	6	18	24
Total	$ 3,502	$ (153)	$ 3,349

[1] The gains in market making and similar activities are primarily offset by losses 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, 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)	2020	2019	2018
Loans reported as trading account assets	**$ (172)**	$ 43	$ 6
Consumer and commercial loans	**(19)**	15	(56)
Loans held-for-sale	**(105)**	57	(4)
Unfunded loan commitments	**(65)**	79	(94)

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.

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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, 2020 and 2019 are presented in the following table.

Fair Value of Financial Instruments

		Fair Value		
(Dollars in millions)	Carrying Value	Level 2	Level 3	Total
	December 31, 2020			
Financial assets				
Loans	$ 887,289	$ 49,372	$ 877,682	$ 927,054
Loans held-for-sale	9,243	7,864	1,379	9,243
Financial liabilities				
Deposits [1]	1,795,480	1,795,545	—	1,795,545
Long-term debt	262,934	271,315	1,164	272,479
Commercial unfunded lending commitments [2]	1,977	99	5,159	5,258
	December 31, 2019			
Financial assets				
Loans	$ 950,093	$ 63,633	$ 914,597	$ 978,230
Loans held-for-sale	9,158	8,439	719	9,158
Financial liabilities				
Deposits [1]	1,434,803	1,434,809	—	1,434,809
Long-term debt	240,856	247,376	1,149	248,525
Commercial unfunded lending commitments [2]	903	90	4,777	4,867

[1] Includes demand deposits of $799.0 billion and $545.5 billion with no stated maturities at December 31, 2020 and 2019.

[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*, *GWIM*, *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 in the core portfolio.

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 consists of ALM activities, equity investments, non-core mortgage loans and servicing activities, liquidating businesses and certain expenses not otherwise allocated to business segments. ALM activities encompass certain residential mortgages, debt securities, interest rate and foreign currency risk management activities. Substantially all of the results of ALM activities 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

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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 substantially all 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.

The following table 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 2020, 2019 and 2018, and total assets at December 31, 2020 and 2019 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)	**2020**	2019	2018	**2020**	2019	2018
Net interest income	**$ 43,859**	$ 49,486	$ 48,772	**$ 24,698**	$ 28,158	$ 27,025
Noninterest income	**42,168**	42,353	42,858	**8,564**	10,429	10,593
Total revenue, net of interest expense	**86,027**	91,839	91,630	**33,262**	38,587	37,618
Provision for credit losses	**11,320**	3,590	3,282	**5,765**	3,772	3,664
Noninterest expense	**55,213**	54,900	53,154	**18,878**	17,646	17,672
Income before income taxes	**19,494**	33,349	35,194	**8,619**	17,169	16,282
Income tax expense	**1,600**	5,919	7,047	**2,112**	4,207	4,150
Net income	**$ 17,894**	$ 27,430	$ 28,147	**$ 6,507**	$ 12,962	$ 12,132
Period-end total assets	**$ 2,819,627**	$ 2,434,079		**$ 988,580**	$ 804,093	

	Global Wealth & Investment Management			Global Banking		
	2020	2019	2018	**2020**	2019	2018
Net interest income	**$ 5,468**	$ 6,504	$ 6,265	**$ 9,013**	$ 10,675	$ 10,993
Noninterest income	**13,116**	13,034	13,188	**9,974**	9,808	9,008
Total revenue, net of interest expense	**18,584**	19,538	19,453	**18,987**	20,483	20,001
Provision for credit losses	**357**	82	86	**4,897**	414	8
Noninterest expense	**14,154**	13,825	14,015	**9,337**	9,011	8,745
Income before income taxes	**4,073**	5,631	5,352	**4,753**	11,058	11,248
Income tax expense	**998**	1,380	1,364	**1,283**	2,985	2,923
Net income	**$ 3,075**	$ 4,251	$ 3,988	**$ 3,470**	$ 8,073	$ 8,325
Period-end total assets	**$ 369,736**	$ 299,770		**$ 580,561**	$ 464,032	

	Global Markets			All Other		
	2020	2019	2018	**2020**	2019	2018
Net interest income	**$ 4,646**	$ 3,915	$ 3,857	**$ 34**	$ 234	$ 632
Noninterest income	**14,120**	11,699	12,326	**(3,606)**	(2,617)	(2,257)
Total revenue, net of interest expense	**18,766**	15,614	16,183	**(3,572)**	(2,383)	(1,625)
Provision for credit losses	**251**	(9)	—	**50**	(669)	(476)
Noninterest expense	**11,422**	10,728	10,835	**1,422**	3,690	1,887
Income (loss) before income taxes	**7,093**	4,895	5,348	**(5,044)**	(5,404)	(3,036)
Income tax expense (benefit)	**1,844**	1,395	1,390	**(4,637)**	(4,048)	(2,780)
Net income (loss)	**$ 5,249**	$ 3,500	$ 3,958	**$ (407)**	$ (1,356)	$ (256)
Period-end total assets	**$ 616,609**	$ 641,809		**$ 264,141**	$ 224,375	

[1] There were no material intersegment revenues.

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The table below presents noninterest income and the associated components for 2020, 2019 and 2018 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		
	2020	2019	2018	**2020**	2019	2018	**2020**	2019	2018
Fees and commissions:									
Card income									
Interchange fees	**$ 3,954**	$ 3,834	$ 3,866	**$ 3,027**	$ 3,174	$ 3,196	**$ 36**	$ 59	$ 81
Other card income	**1,702**	1,963	1,958	**1,646**	1,910	1,907	**42**	42	46
Total card income	**5,656**	5,797	5,824	**4,673**	5,084	5,103	**78**	101	127
Service charges									
Deposit-related fees	**5,991**	6,588	6,667	**3,417**	4,218	4,300	**67**	68	73
Lending-related fees	**1,150**	1,086	1,100	**—**	—	—	**—**	—	—
Total service charges	**7,141**	7,674	7,767	**3,417**	4,218	4,300	**67**	68	73
Investment and brokerage services									
Asset management fees	**10,708**	10,241	10,189	**146**	144	147	**10,578**	10,130	10,042
Brokerage fees	**3,866**	3,661	3,971	**127**	149	172	**1,692**	1,740	1,917
Total investment and brokerage services	**14,574**	13,902	14,160	**273**	293	319	**12,270**	11,870	11,959
Investment banking fees									
Underwriting income	**4,698**	2,998	2,722	**—**	—	—	**391**	401	335
Syndication fees	**861**	1,184	1,347	**—**	—	—	**—**	—	—
Financial advisory services	**1,621**	1,460	1,258	**—**	—	—	**—**	—	2
Total investment banking fees	**7,180**	5,642	5,327	**—**	—	—	**391**	401	337
Total fees and commissions	**34,551**	33,015	33,078	**8,363**	9,595	9,722	**12,806**	12,440	12,496
Market making and similar activities	**8,355**	9,034	9,008	**2**	6	8	**63**	113	112
Other income (loss)	**(738)**	304	772	**199**	828	863	**247**	481	580
Total noninterest income	**$ 42,168**	$ 42,353	$ 42,858	**$ 8,564**	$ 10,429	$ 10,593	**$ 13,116**	$ 13,034	$ 13,188

	Global Banking			Global Markets			All Other [1]		
	2020	2019	2018	**2020**	2019	2018	**2020**	2019	2018
Fees and commissions:									
Card income									
Interchange fees	**$ 499**	$ 519	$ 503	**$ 391**	$ 81	$ 86	**$ 1**	$ 1	$ —
Other card income	**14**	13	8	**—**	(1)	(2)	**—**	(1)	(1)
Total card income	**513**	532	511	**391**	80	84	**1**	—	(1)
Service charges									
Deposit-related fees	**2,298**	2,121	2,111	**177**	156	161	**32**	25	22
Lending-related fees	**940**	894	916	**210**	192	184	**—**	—	—
Total service charges	**3,238**	3,015	3,027	**387**	348	345	**32**	25	22
Investment and brokerage services									
Asset management fees	**—**	—	—	**—**	—	—	**(16)**	(33)	—
Brokerage fees	**74**	34	94	**1,973**	1,738	1,780	**—**	—	8
Total investment and brokerage services	**74**	34	94	**1,973**	1,738	1,780	**(16)**	(33)	8
Investment banking fees									
Underwriting income	**2,070**	1,227	1,090	**2,449**	1,555	1,495	**(212)**	(185)	(198)
Syndication fees	**482**	574	648	**379**	610	698	**—**	—	1
Financial advisory services	**1,458**	1,336	1,153	**163**	123	103	**—**	1	—
Total investment banking fees	**4,010**	3,137	2,891	**2,991**	2,288	2,296	**(212)**	(184)	(197)
Total fees and commissions	**7,835**	6,718	6,523	**5,742**	4,454	4,505	**(195)**	(192)	(168)
Market making and similar activities	**103**	235	260	**8,471**	7,065	7,260	**(284)**	1,615	1,368
Other income (loss)	**2,036**	2,855	2,225	**(93)**	180	561	**(3,127)**	(4,040)	(3,457)
Total noninterest income	**$ 9,974**	$ 9,808	$ 9,008	**$ 14,120**	$ 11,699	$ 12,326	**$ (3,606)**	$ (2,617)	$ (2,257)

[1] *All Other* includes eliminations of intercompany transactions.

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Business Segment Reconciliations

(Dollars in millions)	2020	2019	2018
Segments' total revenue, net of interest expense	$ 89,599	$ 94,222	$ 93,255
Adjustments [1]:			
ALM activities	375	241	(325)
Liquidating businesses, eliminations and other	(3,947)	(2,624)	(1,300)
FTE basis adjustment	(499)	(595)	(610)
Consolidated revenue, net of interest expense	$ 85,528	$ 91,244	$ 91,020
Segments' total net income	18,301	28,786	28,403
Adjustments, net-of-tax [1]:			
ALM activities	279	202	(222)
Liquidating businesses, eliminations and other	(686)	(1,558)	(34)
Consolidated net income	$ 17,894	$ 27,430	$ 28,147

	December 31	
	2020	2019
Segments' total assets	$ 2,555,486	$ 2,209,704
Adjustments [1]:		
ALM activities, including securities portfolio	1,176,071	721,806
Elimination of segment asset allocations to match liabilities	(977,685)	(565,378)
Other	65,755	67,947
Consolidated total assets	$ 2,819,627	$ 2,434,079

[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)	2020	2019	2018
Income			
Dividends from subsidiaries:			
Bank holding companies and related subsidiaries	$ 10,352	$ 27,820	$ 28,575
Nonbank companies and related subsidiaries	—	—	91
Interest from subsidiaries	8,825	9,502	8,425
Other income (loss)	(138)	74	(1,025)
Total income	19,039	37,396	36,066
Expense			
Interest on borrowed funds from related subsidiaries	136	451	235
Other interest expense	4,119	5,899	6,425
Noninterest expense	1,651	1,641	1,600
Total expense	5,906	7,991	8,260
Income before income taxes and equity in undistributed earnings of subsidiaries	13,133	29,405	27,806
Income tax expense (benefit)	649	341	(281)
Income before equity in undistributed earnings of subsidiaries	12,484	29,064	28,087
Equity in undistributed earnings (losses) of subsidiaries:			
Bank holding companies and related subsidiaries	5,372	(1,717)	306
Nonbank companies and related subsidiaries	38	83	(246)
Total equity in undistributed earnings of subsidiaries	5,410	(1,634)	60
Net income	$ 17,894	$ 27,430	$ 28,147

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Condensed Balance Sheet

(Dollars in millions)	December 31 2020	2019
Assets		
Cash held at bank subsidiaries [1]	**$ 5,893**	$ 5,695
Securities	**701**	656
Receivables from subsidiaries:		
Bank holding companies and related subsidiaries	**206,566**	173,301
Banks and related subsidiaries	**213**	51
Nonbank companies and related subsidiaries	**410**	391
Investments in subsidiaries:		
Bank holding companies and related subsidiaries	**305,818**	297,465
Nonbank companies and related subsidiaries	**3,715**	3,663
Other assets	**9,850**	9,438
Total assets	**$ 533,166**	$ 490,660
Liabilities and shareholders' equity		
Accrued expenses and other liabilities	**$ 15,965**	$ 13,381
Payables to subsidiaries:		
Banks and related subsidiaries	**129**	458
Nonbank companies and related subsidiaries	**11,067**	12,102
Long-term debt	**233,081**	199,909
Total liabilities	**260,242**	225,850
Shareholders' equity	**272,924**	264,810
Total liabilities and shareholders' equity	**$ 533,166**	$ 490,660

[1] Balance includes third-party cash held of $7 million and $4 million at December 31, 2020 and 2019.

Condensed Statement of Cash Flows

(Dollars in millions)	2020	2019	2018
Operating activities			
Net income	**$ 17,894**	$ 27,430	$ 28,147
Reconciliation of net income to net cash provided by (used in) operating activities:			
Equity in undistributed (earnings) losses of subsidiaries	**(5,410)**	1,634	(60)
Other operating activities, net	**14,303**	16,973	(3,706)
Net cash provided by operating activities	**26,787**	46,037	24,381
Investing activities			
Net sales (purchases) of securities	**(4)**	(17)	51
Net payments to subsidiaries	**(33,111)**	(19,121)	(2,262)
Other investing activities, net	**(7)**	7	48
Net cash used in investing activities	**(33,122)**	(19,131)	(2,163)
Financing activities			
Net increase (decrease) in other advances	**(422)**	(1,625)	3,867
Proceeds from issuance of long-term debt	**43,766**	29,315	30,708
Retirement of long-term debt	**(23,168)**	(21,039)	(29,413)
Proceeds from issuance of preferred stock	**2,181**	3,643	4,515
Redemption of preferred stock	**(1,072)**	(2,568)	(4,512)
Common stock repurchased	**(7,025)**	(28,144)	(20,094)
Cash dividends paid	**(7,727)**	(5,934)	(6,895)
Net cash provided by (used in) financing activities	**6,533**	(26,352)	(21,824)
Net increase in cash held at bank subsidiaries	**198**	554	394
Cash held at bank subsidiaries at January 1	**5,695**	5,141	4,747
Cash held at bank subsidiaries at December 31	**$ 5,893**	$ 5,695	$ 5,141

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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]	**2020**	**$ 2,490,247**	**$ 75,576**	**$ 18,247**	**$ 16,692**
	2019	2,122,734	81,236	30,699	25,937
	2018		80,777	31,904	26,407
Asia	**2020**	**99,283**	**4,232**	**1,051**	**788**
	2019	102,440	3,491	765	570
	2018		3,507	865	520
Europe, Middle East and Africa	**2020**	**202,701**	**4,491**	**(596)**	**264**
	2019	178,889	5,310	921	672
	2018		5,632	1,543	1,126
Latin America and the Caribbean	**2020**	**27,396**	**1,229**	**293**	**150**
	2019	30,016	1,207	369	251
	2018		1,104	272	94
Total Non-U.S.	**2020**	**329,380**	**9,952**	**748**	**1,202**
	2019	311,345	10,008	2,055	1,493
	2018		10,243	2,680	1,740
Total Consolidated	**2020**	**$ 2,819,627**	**$ 85,528**	**$ 18,995**	**$ 17,894**
	2019	2,434,079	91,244	32,754	27,430
	2018		91,020	34,584	28,147

[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.

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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.

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.

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Key Metrics

Active Digital Banking Users – Mobile and/or online users with activity at period end.

Active Mobile Banking Users – Mobile users with activity at period end.

Book Value – Ending common shareholders' equity divided by ending common shares outstanding.

Deposit Spread – Annualized net interest income divided by average deposits.

Efficiency Ratio – Noninterest expense divided by total revenue, net of interest expense.

Financial advisor productivity – Adjusted MLGWM annualized revenue divided by average financial advisors.

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.

Risk-adjusted Margin – Difference between total revenue, net of interest expense, and net credit losses divided by average loans.

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.

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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
CAO	Chief Administrative Officer
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
EMRC	Enterprise Model Risk Committee
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
G-SIB	Global systemically important bank
GSE	Government-sponsored enterprise
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
IRM	Independent Risk Management
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
MLGWM	Merrill Lynch Global Wealth Management
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
SCCL	Single-counterparty credit limits
SEC	Securities and Exchange Commission
SLR	Supplementary leverage ratio
SOFR	Secured Overnight Financing Rate
SONIA	Sterling Overnight Index Average
TDR	Troubled debt restructurings
TLAC	Total loss-absorbing capacity
VA	U.S. Department of Veterans Affairs
VaR	Value-at-Risk
VIE	Variable interest entity

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Disclosure Controls and Procedures

Bank of America Corporation and Subsidiaries

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.

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Executive Management Team and Management Committee

Bank of America Corporation

Executive Management Team

Brian T. Moynihan*
Chairman of the Board and Chief Executive Officer

Raul A. Anaya
President, Business Banking

Dean C. Athanasia*
President, Retail and Preferred & Small Business Banking

Catherine P. Bessant*
Chief Operations and Technology Officer

D. Steve Boland
President, Retail

Alastair M. Borthwick
President, Global Commercial Banking

Sheri B. Bronstein*
Chief Human Resources Officer

James P. DeMare
President, Global Markets

Paul M. Donofrio*
Chief Financial Officer

Anne M. Finucane
Vice Chairman, Bank of America

Geoffrey S. Greener*
Chief Risk Officer

Christine P. Katziff
Chief Audit Executive

Kathleen A. Knox*
President, Private Bank

Matthew M. Koder
President, Global Corporate & Investment Banking

David G. Leitch*
Global General Counsel

Aron D. Levine
President, Preferred and Consumer Banking & Investments

Bernard A. Mensah
President, International

Thomas K. Montag*
Chief Operating Officer

Thong M. Nguyen*
Vice Chairman, Bank of America

Andrew M. Sieg*
President, Merrill Lynch Wealth Management

Andrea B. Smith*
Chief Administrative Officer

Bruce R. Thompson
Vice Chairman, Bank of America

Sanaz Zaimi
Head of Global Fixed Income, Currencies and Commodities Sales; CEO of BofA Securities Europe SA, and Country Executive for France

Management Committee**

Michael C. Ankrom, Jr.
Global Banking Chief Risk Officer, Enterprise Credit Risk and Enterprise Risk Appetite

Keith T. Banks
Vice Chairman, Head of Investment Solutions Group

Aditya Bhasin
Consumer, Small Business & Wealth Management, Global Human Resources, Corporate Audit & Credit Review, Legal Technology, Third-Party Management and Workspace Services Executive

Alexandre Bettamio
President, Latin America

Rudolf A. Bless
Chief Accounting Officer

Candace E. Browning-Platt
Head of Global Research

Sharon L. Miller
Head of Small Business

Andrei Magasiner
Treasurer

E. Lee McEntire
Head of Investor Relations

Lauren A. Mogensen
Global Compliance and Operational Risk Executive

Tram V. Nguyen
Global Corporate Strategy Executive

Holly O'Neill
Head of Consumer, Small Business & Wealth Management Client Care

David Reilly
Global Banking & Markets, Enterprise Risk and Finance Technology, and Core Technology Infrastructure Executive

Lorna R. Sabbia
Head of Retirement and Personal Wealth Solutions

Robert A. Schleusner
Head of Wholesale Credit

April Schneider
Head of Consumer & Small Business Products

Thomas M. Scrivener
Consumer, Small Business & Wealth Management Operations Executive

Jiro Seguchi
Co-President of Asia Pacific, and Head of Asia Pacific Global Corporate and Investment Banking

Jin Su
Co-President of Asia Pacific, and Co-Head of Asia Pacific Fixed Income, Currencies & Commodities

David C. Tyrie
Head of Digital

Anne Walker
Global Real Estate and Strategic Initiatives Executive

* Executive Officer

** All members of the Executive Management Team are also members of the Management Committee

Board of Directors
Bank of America Corporation

Board of Directors

Brian T. Moynihan
Chairman of the Board and Chief Executive Officer, Bank of America Corporation

Jack O. Bovender, Jr.*
Lead Independent Director, Bank of America Corporation; Former Chairman and Chief Executive Officer, HCA Inc.

Sharon L. Allen
Former Chairman, Deloitte

Susan S. Bies
Former Member, Federal Reserve Board of Governors

Frank P. Bramble, Sr.
Former Executive Vice Chairman, MBNA Corporation

Pierre J.P. de Weck
Former Chairman and Global Head of Private Wealth Management, Deutsche Bank

Arnold W. Donald
President and Chief Executive Officer, Carnival

Linda P. Hudson
Former Chairman and Chief Executive Officer, The Cardea Group, LLC; Former President and Chief Executive Officer, BAE

Monica C. Lozano
Chief Executive Officer, College Futures Foundation; Former Chairman, US Hispanic Media Inc.

Thomas J. May
Former Chairman, President, and Chief Executive Officer, Eversource Energy

Lionel L. Nowell III
Lead Independent Director Successor, Bank of America; Former Senior Vice President and Treasurer, PepsiCo, Inc.

Denise L. Ramos
Former Chief Executive Officer and President, ITT Inc.

Clayton S. Rose
President, Bowdoin College

Michael D. White
Former Chairman, President, and Chief Executive Officer, DIRECTV; Lead Director, Kimberly-Clark Corporation

Thomas D. Woods
Former Vice Chairman and Senior Executive Vice President of CIBC; Former Chairman, Hydro One Limited

R. David Yost
Former Chief Executive Officer, AmerisourceBergen Corporation

Maria T. Zuber
Vice President for Research and E.A. Griswold Professor of Geophysics, MIT

*Not standing for reelection at the 2021 Annual Meeting of Shareholders

Corporate Information
Bank of America Corporation

Headquarters
The principal executive offices of Bank of America Corporation (the Corporation) are located in the Bank of America Corporate Center, 100 North Tryon Street, Charlotte, NC 28255.

Stock Listing
The Corporation's common stock is listed on the New York Stock Exchange (NYSE) under the symbol BAC. The stock is typically listed as BankAm in newspapers. As of December 31, 2020, there were 157,293 registered holders of the Corporation's common stock.

Investor Relations
Analysts, portfolio managers and other investors seeking additional information about Bank of America stock should contact our Equity Investor Relations group at 1.704.386.5681 or i_r@bofa.com. For additional information about Bank of America from a credit perspective, including debt and preferred securities, contact our Fixed Income Investor Relations group at 1.866.607.1234 or fixedincomeir@bofa.com. Visit the Investor Relations area of the Bank of America website, http://investor.bankofamerica.com, for stock and dividend information, financial news releases, links to Bank of America SEC filings, electronic versions of our annual reports and other items of interest to the Corporation's shareholders.

Customers
For assistance with Bank of America products and services, call 1.800.432.1000, or visit the Bank of America website at www.bankofamerica.com. Additional toll-free numbers for specific products and services are listed on our website at www.bankofamerica.com/contact.

News Media
News media seeking information should visit our online newsroom at http://newsroom.bankofamerica.com for news releases, press kits and other items relating to the Corporation, including a complete list of the Corporation's media relations specialists grouped by business specialty or geography.

Annual Report on Form 10-K
The Corporation's 2020 Annual Report on Form 10-K is available at http://investor.bankofamerica.com. The Corporation also will provide a copy of the 2020 Annual Report on Form 10-K (without exhibits) upon written request addressed to:

Bank of America Corporation
Office of the Corporate Secretary
Bank of America Corporate Center
100 North Tryon Street
NC1-007-56-06
Charlotte, NC 28255

Shareholder Inquiries
For inquiries concerning dividend checks, electronic deposit of dividends, dividend reinvestment, tax statements, electronic delivery, transferring ownership, address changes or lost or stolen stock certificates, contact Bank of America Shareholder Services at Computershare Trust Company, N.A., via the Internet at www.computershare.com/bac; call 1.800.642.9855; or write to P.O. Box 505005, Louisville, KY 40233. For general shareholder information, contact Bank of America Office of the Corporate Secretary at 1.800.521.3984. Shareholders outside of the United States and Canada may call 1.781.575.2621. Hearing impaired 1.888.403.9700 or outside the United States 1.781.575.4592.

Electronic Delivery
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00-04-1379B 2020 BAC Annual Report