



**WELLS
FARGO**

WELLS FARGO



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ELIZABETH A. DUKE

Chair, Board of Directors
Wells Fargo & Company

February 20, 2020

2019 brought a great deal of change to Wells Fargo, including the selection of our new CEO, Charlie Scharf. Through it all, the company's foundational commitment to helping customers succeed financially has remained a constant.

Working together, the company and our board continue to make progress in our ongoing transformation. Although much work remains, I am optimistic about our future as we move forward.

The board decided to conduct an external search for a new CEO after Tim Sloan announced his retirement. I am pleased that our search led to the appointment of Charlie as our CEO and president. Charlie is an experienced CEO who has excelled at strategic leadership and execution.

With more than 24 years in leadership roles in the banking and payments industries, Charlie has demonstrated a strong track record in initiating and leading change, driving results, strengthening operational risk and compliance, and innovating amid a rapidly evolving digital landscape.

Charlie embodies the traits our board's search committee was looking for in Wells Fargo's next leader — namely, financial and business acumen, integrity, passion for diversity and inclusion, and commitment to strong talent management. His proven ability to build strong relationships with stakeholders, including customers, employees, regulators, and investors, will be especially important to rebuilding trust and resolving key regulatory issues. He has led organizations in all our major business lines, and his experience with businesses that operate at the scale and complexity of Wells Fargo has prepared him well for this role.

What we have observed in the first few months of Charlie's tenure only confirms our initial high expectations. He brings to Wells Fargo a willingness and ability to make important changes, an urgency to address our regulatory issues, and a recognition of the importance of actively engaging with our stakeholders. He is actively developing his strategic priorities for the company and evaluating them in light of our risk appetite and the capacity of our risk management framework. He is making key organizational changes and has already demonstrated a commitment to direct and transparent communications.

I wish to thank the members of the board's search committee — Chair Jim Quigley, Wayne Hewett, Maria Morris, and Ron Sargent — for conducting a thorough and successful search that was comprehensive in its diligence and reach. I also would like to thank Allen Parker for his exemplary service as interim CEO and president. His leadership during a time of transition enabled Wells Fargo and our team members to continue moving forward in a focused and transparent way.

NEW BOARD MEMBERS

As the company makes important changes, so does the Board of Directors. We continued our efforts to further enhance board effectiveness by adding more directors with expertise in financial services, regulatory matters, and financial reporting.

In June 2019, we welcomed Chuck Noski to the board. Chuck brings broad experience as a corporate director through service on numerous boards, including Booking Holdings Inc., and until recently Microsoft Corporation. He also has financial industry experience through his prior roles as a director of Morgan Stanley and as CFO of Bank of America. In addition to his extensive experience in public accounting and as CFO of Fortune 500 companies, he is the immediate past chairman of the Board of Trustees of the Financial Accounting Foundation, overseer of the Financial Accounting Standards Board. Chuck serves on our board's Audit Committee.

Dick Payne joined the board in October. Dick is a seasoned banking professional with more than 40 years of experience in corporate and commercial banking as well as capital markets with large financial institutions, serving middle-market and large corporate customers in many of the same geographic markets and businesses served by Wells Fargo. He has a deep understanding of banking and the regulatory environment and brings experience and valuable perspective to the board.

Both new directors are already contributing to our progress as we work to transform Wells Fargo, meet the expectations of our regulators, and rebuild trust with our stakeholders.

I also wish to thank John Baker, a member of the Board of Directors, for his years of service and many contributions to the board. John will retire as a director at the company's 2020 annual meeting of shareholders.

LONG-TERM SHAREHOLDER VALUE

While much of the work underway is necessary to meet our regulatory requirements, it will also make us a stronger, nimbler, and more efficient company. The board's oversight is ultimately focused on ensuring the alignment of strategy with risk management, and our ability to satisfy the financial needs of customers while creating value for shareholders. Several examples of actions taken over the past few years include the following:

We changed the organizational structure of Wells Fargo from a decentralized to a centralized model.

We reviewed, and continue to review, all business processes for effectiveness and standardization.

We continued to make strategic choices about the businesses we are in. Over the past few years, we have divested businesses that did not meet our strategic objectives, such as the institutional retirement business, commercial real estate brokerage, crop insurance, property and casualty insurance, stock transfer agent, and payroll services businesses.

In the Consumer Bank, management has continually reviewed and evaluated the branch network, closing some branches and selling others as a result of our customers' steady migration to digital channels.

Throughout 2017 and 2018, the Auto business intentionally slowed its originations in order to make needed changes to its business structure, including centralizing back-office functions from over 50 locations into four hubs across the country, re-engineering processes to improve efficiency and the customer experience, and better managing risk. Following this restructuring, the Auto portfolio started to grow again in 2019.

Charlie and Wells Fargo's management team are taking the strategic business review even further. They are looking inside our businesses, including core franchise businesses, to understand the business fundamentals, competitive position, distribution channels, growth prospects, and required investment to bring each to best-in-class status. At the same time, they are examining the structure, capabilities, and organizational maturity of enterprise functions such as technology, human resources, risk, and finance.

Over the course of 2020, the board and Charlie will work together to design and communicate a strategy that will provide the blueprint for the future of Wells Fargo. In doing so, we remain committed to our diversified business model. And we are mindful of the important role Wells Fargo plays in the economic success of the U.S. and in each customer's financial success. Moving forward, the company has a renewed focus and commitment around our risk management structure and resources to execute against our business strategy and safely and effectively serve our customers.

IN APPRECIATION

On behalf of the Board of Directors, we'd like to thank you, our shareholders, for your continued investment in Wells Fargo. We recognize the commitment you have made to the company and the responsibility that entails. With the sense of urgency Charlie brings to the company, the leadership of our management team, and the hard work of Wells Fargo's 260,000 team members, I'm confident that we can address our current challenges while doing the work necessary to build a strong foundation for the future. While navigating change is difficult, I have faith in the ultimate value of what we are creating together.



ELIZABETH A. DUKE

Chair, Board of Directors
Wells Fargo & Company

February 20, 2020

I write this note just four months after joining Wells Fargo.

It has been a busy time as I've been working to get to know the company and working with the senior team to understand both our opportunities and our challenges. While I've learned a great deal, as I discuss my observations here, please recognize that it is still early days and I do not pretend to have all of the answers yet.

*I was honored to be
chosen to lead Wells Fargo
because I believe this is an
extraordinary company
that plays an important
role in this country.*

We came out of the financial crisis as the most valuable and most respected bank in the United States. However, we also had substantial problems that needed fixing. Significant parts of our operating model were flawed, and we broke our customers' trust in the past. We have not yet effectively addressed all of our problems and these circumstances hurt our employees, hurt our customers, and also have led to financial underperformance.



CHARLES W. SCHARF

CEO
Wells Fargo & Company

But we have one of the most enviable financial services franchises in the world and employees who want to do what's necessary to again be one of the most respected and successful banks in the U.S. The opportunity to do so is in our reach. I will discuss the actions we are taking, but first let me cover our 2019 financial and business performance.

FINANCIAL PERFORMANCE

Our financial results in 2019 reflected the ongoing impact of our historical shortcomings. Even after adjusting for these items, our results were not as strong as we aspire them to be. These items primarily relate to litigation, customer remediation related to previously disclosed retail sales practices matters, as well as other regulatory matters. Our results also included business divestitures and loan sales. They are all detailed in our financial disclosures.

Wells Fargo generated \$19.5 billion in net income in 2019, or \$4.05 per diluted common share. Our revenue declined \$1.3 billion, or 2%, from a year ago as 4% growth in noninterest income was more than offset by a 6% decline in net interest income, driven by lower interest rates. Our noninterest expense increased \$2.1 billion, or 4%, from a year ago. Expenses included \$4.3 billion of operating losses (\$1.2 billion higher than 2018), primarily for litigation and

remediation, as well as \$739 million of deferred compensation expense, which is P&L neutral, as this expense is offset by deferred compensation investment gains.

We continued to serve our customers and grew both loans and deposits in 2019. Loans increased \$9.2 billion, or 1%, from a year ago, with growth in both commercial and consumer loans. Deposits grew \$36.5 billion, or 3%, from a year ago.

At the same time, credit quality continued to be strong. Our net charge-off rate remained near historic lows at 0.29% of average loans in 2019, and nonaccrual loans as a percentage of total loans declined to 0.56%, the lowest level in over 10 years.

In 2019, we returned a record \$30.2 billion to shareholders through common stock dividends and net share repurchases, reducing our common shares outstanding by 10% while maintaining a level of Common Equity Tier 1 that is well in excess of our regulatory requirements. This was the seventh consecutive year we have reduced our common share count, which is down 21% since 2012. In July 2019, we increased our quarterly common stock dividend to 51 cents per share, a 13% increase.

BUSINESS HIGHLIGHTS

The strength of our franchise remains evident. We serve one in three U.S.

households, we have strong distribution across both physical and digital channels, and we remain one of the largest lenders in the U.S. across a large and diversified client base. Despite our recent challenges, these strengths endure and you can see that if you look at the growth of some of our underlying business drivers. To be clear, we can do better, but I'll touch on some key highlights across our businesses over the past year.

In Community Banking, primary consumer checking customers increased 2% year-over-year, our ninth consecutive quarter of year-over-year growth. Our customers spent \$448 billion across our debit and credit cards, an increase of 6%. We continued to invest across our various channels and delivered differentiated experiences to meet our customer needs. We ended the year with over 30 million digital active customers, a 4% increase, and mobile active customers of 24.4 million were 7% higher. Our card customers can now complete transactions more seamlessly, as we have begun rolling out new tap-to-pay contactless cards. This functionality is available at millions of merchants, in addition to our own more than 13,000 ATMs across the nation. We're making steady progress and the hard work of our teams is reflected in what we are hearing from customers, as our branch survey scores for both customer loyalty (64.2%, up from 60.2%) and overall satisfaction with most recent visit (79.9%, up from 78.7%) increased year-over-year.

On the Consumer Lending side, origination momentum accelerated across our Home Lending and Auto platforms. Our Auto portfolio returned to growth in 2019 after a multiyear transformation. In addition, we continued to invest to improve the customer experience and enhance our own operational capabilities in both these areas. As evidence, in 2019, for the first time, we had a month when more than half of all mortgage applications came to us through our online mortgage app. The online mortgage app is fully digital and shortens the time from origination to customer approval by approximately 30%.

And in Auto, our automated decisioning went from 40% at the end of 2018 to 57% today, which allows us to be responsive to dealers for whom speed is a top priority and also drive consistency that supports our focus on risk management.

Our wholesale businesses, including Commercial Banking and Corporate and Investment Banking, saw loan growth of 1% as we selectively expanded the portfolio. In Commercial Banking, we accelerated our efforts to deliver a more consistent customer experience by segmenting customers to the most appropriate coverage channel, virtual or market-based. Additionally, we developed a revamped customer onboarding platform and have begun rolling it out to customers. Over 12,000 accounts have been opened to date on the platform and the early results so far have been impressive, reducing the customer onboarding cycle time by two-thirds. These changes are critical to our ongoing efforts to not only serve our customers better, but also reduce risk and improve our operational capabilities. It is our intent to leverage these efforts and roll out the common onboarding platform to our other wholesale businesses.

The Corporate and Investment Bank performed well in 2019. We grew our overall U.S. investment banking fee market share by 50 basis points to 3.7% driven by strong growth in high-grade debt capital markets and in loan syndications. Overall, we raised \$115 billion of debt capital for our clients. And our Markets businesses performed well, with strong performance across the FICC franchise, up 15%, including particularly strong results in our Credit, Rates, and Commodities businesses.

In Wealth and Investment Management, we continued to simplify our go-to-market and operating model. We brought together our private wealth management businesses and centralized previously siloed key supporting capabilities like Lending, Banking, and Operations across the platform. We also divested the Institutional

Retirement and Trust business. These changes are designed to simplify and focus our businesses to better serve the needs of our changing client base.

In addition, we had solid investment performance — on average, Wells Fargo Investment Institute’s actively managed portfolios outperformed relevant Morningstar benchmarks by over 150 basis points. Client assets of \$1.9 trillion increased 10% and we saw further momentum resulting from our Community Bank and Wealth and Investment Management partnership as closed referred investment assets grew 18% year-over-year in the fourth quarter.

Again, while we need to improve our overall financial results, positive momentum across many of our underlying business drivers speaks to the strength of the franchise and the substantial opportunities we have to improve financial performance in the future.

**THE PATH TO SUCCESS
DOING THE WORK NECESSARY
TO BUILD A STRONG FOUNDATION**

To fully capture the opportunity to once again be one of the most respected and successful banks in the country, we must have a strong foundation and move with an extreme sense of urgency to fix what was wrong with the bank. We still have much more work to do to put these issues

behind us, and our future depends on doing this successfully so we can regain trust with all stakeholders. This includes our clients, employees, regulators, lawmakers, shareholders, as well as the broader American population. Ultimately, we know our actions will dictate when that trust is completely regained, not our words. Given their importance, I’ve been spending the majority of my time on addressing these issues since joining the company.

ASSESSMENT – In an organization like Wells Fargo, providing an honest assessment and clear priorities to the entire organization is critical. I’ve given a clear message that we have not yet met our own expectations or the expectations of others. We must do what’s necessary to put these issues behind us. Our ability to maximize the value of this great franchise is dependent on us running the company with the highest standards of operational excellence and integrity — beyond what we’ve done to date.

REGULATORS – I am often asked about our regulatory relationships so let me provide my perspective. My experience is that our regulators are clear, direct, tough, but fair. We are appropriately a highly regulated institution, and while we need to fulfill regulatory expectations, we recognize that what we want and what regulators want are not different. We are

responsible for our actions and they are responsible for ensuring our actions are consistent with a clearly defined set of standards. It's our job to run the company such that we fulfill their expectations and those of the American public and other countries where we operate. Our job is to do the work that's necessary. Regulators and other stakeholders will determine when it's done to their satisfaction.

WHAT WE ARE DOING – Like any other problem, recognition of the importance and severity is a necessary first step — but this by itself is inadequate. We will take whatever actions are necessary. The management team will be judged and held accountable for resolving these issues.

We are making significant changes to our management, structure, processes, and culture to accomplish our work — changes that will make us more effective.

THE TEAM – First, I want to acknowledge that we have so many wonderful people at Wells Fargo who have done an amazing job serving our clients and customers in the face of adversity for several years now. They have been through so much and have helped us sustain such a great franchise — so I do want to say thank you to them for all that they've done. The warmth and support I've been greeted with as I've discussed our past issues and work in front of us tells a great deal about the character of many

at the company. They understand our lack of progress makes their jobs far more difficult — and they are looking to management to do more to move the company forward.

To set us up for success, we will ensure we have the right people in place to both resolve these issues and be the stewards of this great company as we move forward. To that end, we have made some important changes to the senior management team to complement the talent that's here at Wells Fargo.

Scott Powell joined us as COO. When I arrived at the company, many on the senior management team made clear to me that we needed stronger execution skills. After several weeks at the company, I came to quickly agree. Scott will lead a transformation across the company where high-quality execution, clear accountability, and operational excellence become part of our culture.

Mike Weinbach will join us as CEO of Consumer Lending and will have responsibility for Home Lending, Auto, Credit Cards & Merchant Services, and Personal Lines & Loans, including Student Lending. We are one of the largest providers of consumer credit in the country and want to continue serving that important role for our customers and the U.S. economy. Mike has the right experience, skills, and knowledge to lead these franchises going forward.

Bill Daley joined as head of Public Affairs. He has a strong and experienced voice and brings perspectives from the public sector that we in business do not generally have but are critical for us as we make decisions.

Allen Parker, who served both as General Counsel and Interim CEO, has announced that he will be leaving the company in March. As I write this, we are engaged in a General Counsel search and have seen some terrific candidates.

Avid Modjtabai has announced that she will be retiring in March after 26 years at Wells Fargo. I will discuss below how we are restructuring Avid's responsibilities.

Ray Fischer has also joined us to run our Credit Cards & Merchant Services businesses, which will be part of Consumer Lending (more details below). Our card business is important to our franchise and we have an opportunity to make it even more significant. Ray is an experienced card and merchant services executive who brings deep knowledge and a fresh perspective to our business.

Saul Van Beurden joined us as our new head of Technology earlier in 2019. Saul has great experience as a technology leader in financial services and his impact will certainly be a key element of the company's control, customer experience, business and risk management transformation, and growth agenda.

Julie Scammahorn also joined us as our Chief Auditor earlier in 2019. Julie will play a critical role and hold us to the highest standards as we build effective execution into all we do.

These changes are all critical to our future, and I will continue to look at the structure and roles of our team to ensure we are best positioned for success. We need and will have the best talent and strong leadership at the company.

ORGANIZATION STRUCTURE – We have made several changes which I believe enable us to be more effective in pursuing our goals. First, we reorganized the company into five lines of business and announced several new business leaders to help further drive operating, control, and business performance.

Consumer and Small Business Banking – Mary Mack, who most recently led Consumer Banking, is now CEO of Consumer and Small Business Banking, responsible for Branch Banking and Small Business, which includes the company’s 5,400 branches and delivers a full range of deposit, lending, investment, and payment products. Mary will now have additional responsibilities for Deposits and a newly established Digital team focused on acquiring and servicing new customers through digital channels.

Consumer Lending – as mentioned earlier, Mike Weinbach will join us in a couple of months as CEO of Consumer Lending, elevating a core competency of the company that provides critical capabilities to fulfill the financial needs of customers. Mike will be responsible for Home Lending, Auto, Credit Cards & Merchant Services, and Personal Lines & Loans, including Student Lending.

Commercial Banking – Perry Pelos is CEO of Commercial Banking, with both relationship and product responsibilities in serving businesses with annual sales generally in excess of \$5 million. Perry is now responsible for Middle Market Banking, Commercial Capital, and Treasury Management. We’re proud of our market position and believe we have great opportunities to expand our franchise by continuing to integrate these products and capabilities.

Corporate and Investment Banking – Jon Weiss, who most recently ran our Wealth and Investment Management business, is now CEO of our Corporate and Investment Bank. The creation of a separate business line supporting the capital markets, banking, and investment needs of our corporate, government, and institutional clients is a recognition of the successful franchise we have today and our belief that we continue to have significant opportunities to serve the needs of our corporate and middle market clients more broadly. Commercial Real Estate and our International franchise will be a part of Corporate and Investment Banking.

Wealth and Investment Management – Our Wealth and Investment Management business provides a full range of personalized wealth management, investment, asset management, and retirement products and services to clients. We restructured the businesses and management over the past couple of years and are conducting a search to replace Jon as the leader of this business.

This new organizational structure is flatter and provides important businesses more direct representation on our Operating Committee. It provides the necessary clarity and accountability and sets us up to build our businesses over the long term and increases our ability to successfully execute on our top priority, which is the risk, regulatory, and control work.

CHANGES TO HOW WE RUN THE COMPANY AND OUR CULTURE –

We are also introducing a new set of disciplines in how we run the company which seek to preserve some important pieces of our culture while recognizing where we need to change. These changes are critical for our future and I'm confident will improve our performance.

Parts of our culture are wonderful and would take decades to recreate. People who work here love it. Wells Fargo really is like a second family to many. We focus on teamwork — not on the individual. People want to be successful and do what's right — though we recognize we have fallen short of this goal.

Our lack of progress and under-performance point to shortcomings. Going forward:

We will operate as one company, not a series of decentralized businesses.

We will continue to foster a culture of partnership, but we will move past the need for consensus and have open and direct fact-based discussions where we emerge with decisions.

We will have a different level of management discipline than we've had in the past and will value and expect high-quality execution.

There will be clear responsibility and accountability.

We will judge ourselves based upon our outcomes — not our words.

And we will ultimately judge ourselves versus the best as we believe that we should be the best.

As we've begun to implement this new culture, the response has been overwhelmingly supportive. But I understand it's different and is a significant change for many. We will be respectful of our past and of those who have built this great franchise — which includes so many still at the company today — but we must move forward. I'm confident these changes will be highly impactful. Respect was earned in the past, and we will earn it again.

CORPORATE AND SOCIAL RESPONSIBILITY

As we make the changes to build a stronger foundation for the company, we will continue to recognize and act upon the broader role we play in our communities. Notably, we became a proud signatory of the Statement on the Purpose of a Corporation that was issued by the Business Roundtable in August of this past year. It's simple and straightforward, and it's a clear statement that businesses are responsible to a broad set of constituents and have responsibilities beyond what some companies have believed historically. Given the businesses we're in and the reach we have, I believe our responsibilities and potential for impact are particularly great.

Like many companies, we are taking an active role in addressing important social and environmental challenges, and we are constantly asking ourselves: How can we improve these efforts to drive even more positive impact? We believe the answer is to invest in innovative solutions fueled by a range of resources and expertise from across our entire company. We see our philanthropy, which totaled \$455 million in 2019, as only the beginning — a way to seed investments that our core business capabilities, people, and built-in scale can then power for even greater impact.

For example, we believe we have a responsibility to do our part to support the transition to a low-carbon economy and to work with our customers and communities to address the risks of climate change. Our \$200 billion sustainable finance commitment, announced in 2018, is central to our efforts in supporting sustainable business opportunities, including providing needed capital to renewable energy companies and empowering clean technology entrepreneurs. We continued to make strong progress in 2019 and we have now provided approximately \$49 billion in sustainable financing toward our commitment of \$200 billion by 2030.

We are also one of the largest sources of capital for affordable housing development in the country. In 2019, Wells Fargo provided more than \$4 billion of capital to support the development of more than 15,000 affordable housing units in communities in over 30 states. Building on this expertise, the Wells Fargo Foundation announced a \$1 billion philanthropy commitment over six years to catalyze new ways to address the

growing housing affordability crisis in the U.S., where more than 18 million households are spending 50% of their income on housing. We're working with a range of grantees to test and scale innovations that increase the number of affordable rental units, expand homeownership opportunities, and develop solutions to persistent homelessness in cities.

Our employees also care deeply about the communities we serve, and we have introduced new ways to turn that caring into opportunities to take action. In 2019, more than 100,000 of our people provided 1.9 million hours of volunteer service through efforts such as our new Dedicated Day of Service in which more than 900 Wells Fargo volunteer events were held on a single day this past September.

These are just a few examples of our ongoing commitment to the people and communities in which we do business. Our goal is to combine our giving, our expertise, and our ingenuity in order to move the needle on social and environmental issues that impact us all.

DIVERSITY AND INCLUSION

Diversity and inclusion are absolutely integral parts of our business. We serve a diverse group of clients and communities, and it's essential that our people reflect that diversity. Our goal is nothing less than ensuring that people across our workforce, communities, and supply chain feel valued and respected and have equal access to resources and opportunities to succeed.

And this isn't just cheap talk — while it's the right thing to do, it is my firm belief that bringing together people of different backgrounds, experiences, and identities leads to significantly better outcomes.

We're very focused on this across the company. I will be personally chairing our Enterprise Diversity & Inclusion Council. This group, composed of leaders from across the organization, meets monthly and is charged with driving the education and change necessary for making meaningful progress against our objectives. We are setting clear, specific, and measurable goals and will be holding people accountable to advancing our diversity and inclusion efforts at all levels.

To further support our efforts, we have ten different Team Member Networks (TMNs) formed around historically under-represented segments. Our TMNs bring together people of common interests, backgrounds, experiences, or identities, and provide forums to support career and professional development of their members, engage and volunteer in our communities together, and serve as additional mechanisms for embedding inclusive practices into our day-to-day operations. We have approximately 74,000 active participants across these networks.

We've made progress on a number of fronts but we also know we have much work to do. It won't be a straight line, but we're focused on it and will be holding ourselves accountable for advancing these goals over a period of time.

MEDIUM AND LONGER TERM OPPORTUNITIES

Our franchises are world class and are in the sweet spot of providing necessary financial services for consumers, small businesses, and middle market and large corporate companies. And importantly, we play a significant role in helping our customers and clients prosper as well as being an important enabler for U.S. economic growth. While I have spoken at length of our problems and our commitment to fix them, the underlying franchise itself remains strong, and our opportunities are greater than ever. The success of our business model is proven, assuming we run the company with the appropriate controls and work as one company with the goal of delivering for all our stakeholders.

All of our business segments have the breadth and scale that give us significant competitive advantage and allow us to deliver truly differentiated products and experiences for our customers and clients. Our opportunity to use technology to drive both automation and new solutions will continue to grow.

Our franchises, both individually and collectively, are the envy of many. So while our resources and attention today are appropriately focused on historical issues, as we move forward, we will be in a position to leverage our unique franchise and focus on generating stronger financial results.

And just to be clear, we are well aware that our expense levels are significantly too high. Part of this is driven by significant expense related to resolving historical issues, part is due to the necessary investments in technology, and part is due to significant inefficiencies that exist across the organization. But there is no reason why we shouldn't have best-in-class efficiency with these businesses at this scale — and that ultimately will be our goal.

And, though we've had pockets of strong performance, we are also well aware that our rate of customer and revenue growth is too low. Given what we've been through, this isn't surprising. We have been operating under an asset cap as part of the Federal Reserve consent order from February 2018 and there is certainly an opportunity

cost to doing so. Management time and resources have not been as focused on growth as they otherwise would have been. But we have an opportunity to think differently, with a different level of rigor about how to grow the franchise. All of this points to great opportunity.

We have begun a process to rethink our plans for 2020 and beyond at a very detailed level. While the opportunities for improvement are clear at a macro level, we need business-by-business plans. Accordingly, we have begun conducting business reviews where we are looking at our businesses and plans in detail. We are reviewing all businesses as well as all of our enterprise functions.

This isn't merely a review of the numbers, but one where we use the facts to form a basis to discuss strategy and potential actions. We are asking each business leader to show us what best-in-class efficiency looks like — and what our path to achieve it is. We are reviewing revenue growth and return performance as well — and what a path to best-in-class looks like. We are discussing our competitors — large and small — and we are thinking through our unique options given our special franchise. These are analytical and strategic discussions that I don't think have occurred consistently across the company in some time given what has occurred.

The output of this work is designed to provide us roadmaps to not only improve our performance within each business but to also position us to understand our opportunities across the company and prioritize accordingly.

It's still very early in our process — but I will say that every session thus far has reinforced that our opportunities are meaningful. To do this properly, and given our priorities, it will take time — much of this year — to complete our work. But in the interim, we will devote all necessary resources to risk and control, and spend what's necessary. We will be as diligent as ever to drive efficiencies and control expenses, and we will begin to work through the business opportunities we have in front of us.

CLOSING THOUGHTS

In closing, I want to repeat my thanks to the wonderful people at Wells Fargo who have worked tirelessly to sustain this great company. We are lucky that you have persevered through the tough times, and I and the members of our Operating Committee will do all we can to help guide us through the necessary changes we need to make.

I'm confident in our ability to realize our potential — one that again puts us at the top of the respected financial institutions list, with a far more efficient organization and higher revenue growth than you see today. While there is much to do, and I know the path to success will be bumpy, I'm optimistic about our future and excited to be at a place with so many great people, and such strong franchises, doing incredibly important work.



CHARLES W. SCHARF

CEO
Wells Fargo & Company

Our Performance

	2019	2018	% CHANGE
<small>\$ in millions, except per share amounts</small>			
FOR THE YEAR			
Wells Fargo net income	\$ 19,549	22,393	(13)
Wells Fargo net income applicable to common stock	17,938	20,689	(13)
Diluted earnings per common share	4.05	4.28	(5)
Profitability ratios:			
Wells Fargo net income to average assets (ROA)	1.02 %	1.19	(14)
Wells Fargo net income applicable to common stock to average Wells Fargo common stockholders' equity (ROE)	10.23	11.53	(11)
Return on average tangible common equity (ROTCE) ¹	12.20	13.73	(11)
Efficiency ratio ²	68.4	65.0	5
Total revenue	\$ 85,063	86,408	(2)
Pre-tax pre-provision profit ³	26,885	30,282	(11)
Dividends declared per common share	1.92	1.64	17
Average common shares outstanding	4,393.1	4,799.7	(8)
Diluted average common shares outstanding	4,425.4	4,838.4	(9)
Average loans	\$ 950,956	945,197	1
Average assets	1,913,444	1,888,892	1
Average total deposits	1,286,261	1,275,857	1
Average consumer and small business banking deposits ⁴	749,967	747,183	-
Net interest margin	2.73 %	2.91	(6)
AT YEAR-END			
Debt securities	\$ 497,125	484,689	3
Loans	962,265	953,110	1
Allowance for loan losses	9,551	9,775	(2)
Goodwill	26,390	26,418	-
Equity securities	68,241	55,148	24
Assets	1,927,555	1,895,883	2
Deposits	1,322,626	1,286,170	3
Common stockholders' equity	166,669	174,359	(4)
Wells Fargo stockholders' equity	187,146	196,166	(5)
Total equity	187,984	197,066	(5)
Tangible common equity ¹	138,506	145,980	(5)
Capital ratios ⁵ :			
Total equity to assets	9.75 %	10.39	(6)
Risk-based capital ⁶ :			
Common Equity Tier 1	11.14	11.74	(5)
Tier 1 capital	12.76	13.46	(5)
Total capital	15.31	16.60	(8)
Tier 1 leverage	8.31	9.07	(8)
Common shares outstanding	4,134.4	4,581.3	(10)
Book value per common share ⁷	\$ 40.31	38.06	6
Tangible book value per common share ^{1,7}	33.50	31.86	5
Team members (active, full-time equivalent)	259,800	258,700	-

¹ Tangible common equity is a non-GAAP financial measure and represents total equity less preferred equity, noncontrolling interests, goodwill, certain identifiable intangible assets (other than mortgage servicing rights) and goodwill and other intangibles on nonmarketable equity securities, net of applicable deferred taxes. The methodology of determining tangible common equity may differ among companies. Management believes that return on average tangible common equity and tangible book value per common share, which utilize tangible common equity, are useful financial measures because they enable investors and others to assess the Company's use of equity. For additional information, including a corresponding reconciliation to GAAP financial measures, see the "Financial Review – Capital Management – Tangible Common Equity" section in this Report.

² The efficiency ratio is noninterest expense divided by total revenue (net interest income and noninterest income).

³ Pre-tax pre-provision profit (PTPP) is total revenue less noninterest expense. Management believes that PTPP is a useful financial measure because it enables investors and others to assess the Company's ability to generate capital to cover credit losses through a credit cycle.

⁴ Consumer and small business banking deposits are total deposits excluding mortgage escrow and wholesale deposits.

⁵ See the "Financial Review – Capital Management" section and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report for additional information.

⁶ The risk-based capital ratios were calculated under the lower of the Standardized or Advanced Approach determined pursuant to Basel III. Beginning January 1, 2018, the requirements for calculating common equity tier 1 and tier 1 capital, along with risk-weighted assets, became fully phased-in. Accordingly, the information presented reflects fully phased-in common equity tier 1 capital, tier 1 capital and risk-weighted assets for the years ended December 31, 2019 and 2018, but reflects all other ratios still in accordance with Transition Requirements. See the "Financial Review – Capital Management" section and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report for additional information.

⁷ Book value per common share is common stockholders' equity divided by common shares outstanding. Tangible book value per common share is tangible common equity divided by common shares outstanding.

Board of Directors



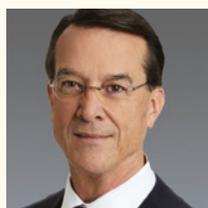
JOHN D. BAKER II ^{1, 3, 4}

Executive Chairman and CEO
FRP Holdings, Inc.



CELESTE A. CLARK ^{2, 3, 5}

Principal, Abraham Clark Consulting, LLC
and Retired Senior Vice President
Global Public Policy and External Relations
and Chief Sustainability Officer
Kellogg Company



THEODORE F. CRAVER, JR. ^{1, 4}

Retired Chairman, President and CEO
Edison International



ELIZABETH A. DUKE ^{4, 5, 7}

Chair
Wells Fargo & Company
Former member of the Federal
Reserve Board of Governors



WAYNE M. HEWETT ^{2, 6, 7}

Senior Advisor, Permira
and Chairman, DiversiTech Corporation



DONALD M. JAMES ^{4, 5, 6}

Retired Chairman
Vulcan Materials Company



MARIA R. MORRIS ^{6, 7}

Retired Executive Vice President and Head of Global Employee Benefits business
MetLife, Inc.



JAMES H. QUIGLEY ^{1, 7}

CEO Emeritus and Retired Partner
Deloitte



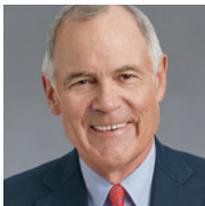
CHARLES H. NOSKI ¹

Retired Vice Chairman and Former Chief Financial Officer
Bank of America Corporation



RONALD L. SARGENT ^{1, 5, 6}

Retired Chairman and CEO
Staples, Inc.



RICHARD B. PAYNE, JR. ³

Retired Vice Chairman
Wholesale Banking
U.S. Bancorp



CHARLES W. SCHARF

CEO
Wells Fargo & Company



JUAN A. PUJADAS ^{3, 4, 7}

Retired Principal
PricewaterhouseCoopers LLP
and Former Vice Chairman
Global Advisory Services
PwC International



SUZANNE M. VAUTRINOT ^{2, 3, 7}

President, Kilovolt Consulting, Inc.
and Major General and Commander
United States Air Force (retired)

STANDING COMMITTEES

1. Audit 2. Corporate Responsibility 3. Credit 4. Finance
5. Governance and Nominating 6. Human Resources 7. Risk | As of February 15, 2020

Corporate Responsibility: 2019 Environmental, Social, and Governance Highlights

Wells Fargo believes in creating a thriving global economy that benefits all stakeholders. By combining our resources and expertise with scale of operations, the company can effect positive societal change and inclusive economic growth. Below are examples of progress made on that journey.

Building a better tomorrow starts with acknowledging the work still to be done. Wells Fargo is committed to continuing to do its part to build a stronger and more resilient company, workforce, global community, and environment.

COMMITTED

\$1B

in philanthropic capital through 2025

to address the U.S. housing affordability crisis — from homelessness and transitional housing to rentals and homeownership

HELPED

435K

minority households purchase a home

since 2016 through our commitment to increase homeownership among all minority communities

PROVIDED
APPROXIMATELY

\$49B

in financing to sustainable businesses and projects since 2018 — with 67% toward low-

carbon opportunities. Achieved 24% of our goal to invest \$200 billion by 2030 to accelerate the transition to a low-carbon economy

ENABLED
9.2M

customers to better manage their credit by providing free access to their FICO® Score

ASSISTED
23K

aspiring homeowners through LIFT programs to become homeowners through education and down payment assistance grants since 2012

INTEND TO MEET
100%

of our global electricity needs with renewable energy* and entered our largest long-term renewable energy purchase to date, supporting a new utility scale solar asset that is scheduled to begin delivering solar energy to the grid in 2021

*Renewable energy sources include on-site solar, long-term contracts that fund net new sources of off-site renewable energy, and the purchase of renewable energy and renewable energy certificates (RECs).

INVESTED

\$455M

in grants in 2019 to unlock economic opportunity for people and communities across the U.S. and internationally

HELPED

2M+

customers avoid overdraft charges with Overdraft Rewind®

PROVIDED

\$1.15M

in project financing for new wind, solar, and fuel cell projects providing **2.6K+ megawatts** of renewable energy capacity

ACHIEVED A

100%

perfect score for the 16th year on the Corporate Equality Index (Human Rights Campaign)

“I’m confident in our ability to realize our potential — one that again puts us at the top of the respected financial institutions list, with a far more efficient organization and higher revenue growth than you see today.”

CHARLES W. SCHARF

WELLS FARGO & COMPANY 2019 FINANCIAL REPORT

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This Annual Report, including the Financial Review and the Financial Statements and related Notes, contains forward-looking statements, which may include forecasts of our financial results and condition, expectations for our operations and business, and our assumptions for those forecasts and expectations. Do not unduly rely on forward-looking statements. Actual results may differ materially from our forward-looking statements due to several factors. Factors that could cause our actual results to differ materially from our forward-looking statements are described in this Report, including in the “Forward-Looking Statements” and “Risk Factors” sections, and in the “Regulation and Supervision” section of our Annual Report on Form 10-K for the year ended December 31, 2019 (2019 Form 10-K).

When we refer to “Wells Fargo,” “the Company,” “we,” “our,” or “us” in this Report, we mean Wells Fargo & Company and Subsidiaries (consolidated). When we refer to the “Parent,” we mean Wells Fargo & Company. See the Glossary of Acronyms for definitions of terms used throughout this Report.

Financial Review

Overview

Wells Fargo & Company is a diversified, community-based financial services company with \$1.9 trillion in assets. Founded in 1852 and headquartered in San Francisco, we provide banking, investment and mortgage products and services, as well as consumer and commercial finance, through 7,400 locations, more than 13,000 ATMs, digital (online, mobile and social), and contact centers (phone, email and correspondence), and we have offices in 32 countries and territories to support customers who conduct business in the global economy. With approximately 260,000 active, full-time equivalent team members, we serve one in three households in the United States and ranked No. 29 on *Fortune’s* 2019 rankings of America’s largest corporations. We ranked fourth in assets and third in the market value of our common stock among all U.S. banks at December 31, 2019.

On February 11, 2020, we announced a new organizational structure with five principal lines of business: Consumer and Small Business Banking; Consumer Lending; Commercial Banking; Corporate and Investment Banking; and Wealth and Investment Management.

Wells Fargo’s top priority remains meeting its regulatory requirements in order to build the right foundation for all that lies ahead. To do that, the Company is committing the resources necessary to ensure that we operate with the strongest business practices and controls, maintain the highest level of integrity, and have in place the appropriate culture.

Federal Reserve Board Consent Order Regarding Governance Oversight and Compliance and Operational Risk Management

On February 2, 2018, the Company entered into a consent order with the Board of Governors of the Federal Reserve System (FRB). As required by the consent order, the Company’s Board of Directors (Board) submitted to the FRB a plan to further enhance the Board’s governance and oversight of the Company, and the Company submitted to the FRB a plan to further improve the Company’s compliance and operational risk management program. The Company continues to engage with the FRB as the Company works to address the consent order provisions. The consent order also requires the Company, following the FRB’s acceptance and approval of the plans and the Company’s adoption and implementation of the plans, to complete an initial third-party review of the enhancements and improvements provided for in the plans. Until this third-party review is complete and the plans are approved and implemented to the satisfaction of the FRB, the Company’s total consolidated assets will be limited to the level as of December 31, 2017. Compliance with this asset cap will be measured on a two-quarter daily average basis to allow for management of

temporary fluctuations. As of the end of fourth quarter 2019, our total consolidated assets, as calculated pursuant to the requirements of the consent order, were below our level of total assets as of December 31, 2017. Additionally, after removal of the asset cap, a second third-party review must also be conducted to assess the efficacy and sustainability of the enhancements and improvements.

Consent Orders with the Consumer Financial Protection Bureau and Office of the Comptroller of the Currency Regarding Compliance Risk Management Program, Automobile Collateral Protection Insurance Policies, and Mortgage Interest Rate Lock Extensions

On April 20, 2018, the Company entered into consent orders with the Consumer Financial Protection Bureau (CFPB) and the Office of the Comptroller of the Currency (OCC) to pay an aggregate of \$1 billion in civil money penalties to resolve matters regarding the Company’s compliance risk management program and past practices involving certain automobile collateral protection insurance policies and certain mortgage interest rate lock extensions. As required by the consent orders, the Company submitted to the CFPB and OCC an enterprise-wide compliance risk management plan and a plan to enhance the Company’s internal audit program with respect to federal consumer financial law and the terms of the consent orders. In addition, as required by the consent orders, the Company submitted for non-objection plans to remediate customers affected by the automobile collateral protection insurance and mortgage interest rate lock matters, as well as a plan for the management of remediation activities conducted by the Company.

Retail Sales Practices Matters

In September 2016, we announced settlements with the CFPB, the OCC, and the Office of the Los Angeles City Attorney, and entered into related consent orders with the CFPB and the OCC, in connection with allegations that some of our retail customers received products and services they did not request. As a result, it remains a top priority to rebuild trust through a comprehensive action plan that includes making things right for our customers, team members, and other stakeholders, and building a better Company for the future. Our priority of rebuilding trust has included numerous actions focused on identifying potential financial harm to customers resulting from these matters and providing remediation.

For additional information regarding retail sales practices matters, including related legal matters, see the “Risk Factors”

section and Note 17 (Legal Actions) to Financial Statements in this Report.

Other Customer Remediation Activities

Our priority of rebuilding trust has also included an effort to identify other areas or instances where customers may have experienced financial harm, provide remediation as appropriate, and implement additional operational and control procedures. We are working with our regulatory agencies in this effort. We have previously disclosed key areas of focus as part of our rebuilding trust efforts and are in the process of providing remediation for those matters. We have accrued for the reasonably estimable remediation costs related to our rebuilding trust efforts, which amounts may change based on additional facts and information, as well as ongoing reviews and communications with our regulators.

As our ongoing reviews continue, it is possible that in the future we may identify additional items or areas of potential concern. To the extent issues are identified, we will continue to assess any customer harm and provide remediation as appropriate. For more information, including related legal and regulatory risk, see the "Risk Factors" section and Note 17 (Legal Actions) to Financial Statements in this Report.

Financial Performance

In 2019, we generated \$19.5 billion of net income and diluted earnings per common share (EPS) of \$4.05, compared with \$22.4 billion of net income and EPS of \$4.28 for 2018. Financial performance items for 2019 (compared with 2018) included:

- revenue of \$85.1 billion, down from \$86.4 billion, with net interest income of \$47.2 billion, down \$2.8 billion, or 6%, and noninterest income of \$37.8 billion, up \$1.4 billion, or 4%;
- the net interest margin was 2.73%, down 18 basis points;
- noninterest expense of \$58.2 billion, up \$2.1 billion, or 4%;
- an efficiency ratio of 68.4%, compared with 65.0%;
- average loans of \$951.0 billion, up \$5.8 billion;
- average deposits of \$1.3 trillion, up \$10.4 billion;
- our credit results remained strong with a net charge-off rate of 0.29%, flat compared with a year ago;
- nonaccrual loans of \$5.3 billion, down \$1.2 billion, or 18%;
- \$30.2 billion in capital returned to our shareholders through common stock dividends and net share repurchases, up 17% from \$25.8 billion a year ago; and
- return on assets (ROA) of 1.02% and return on equity (ROE) of 10.23%, down from 1.19% and 11.53%, respectively.

Table 1 presents a six-year summary of selected financial data and Table 2 presents selected ratios and per common share data.

Balance Sheet and Liquidity

Our balance sheet remained strong during 2019 with strong credit quality and solid levels of liquidity and capital. Our total assets were \$1.9 trillion at December 31, 2019. Cash and other short-term investments decreased \$10.1 billion from December 31, 2018, reflecting lower cash balances, partially offset by an increase in federal funds sold and securities purchased under resale agreements. Debt securities increased \$12.4 billion from December 31, 2018, predominantly due to increases in trading and held-to-maturity debt securities. Loans increased \$9.2 billion from December 31, 2018, driven by increases in commercial and industrial loans, commercial real estate mortgage loans, real estate 1-4 family first mortgage loans, automobile loans, credit card loans, and lease financing,

partially offset by decreases in commercial real estate construction loans, real estate 1-4 family junior lien mortgage loans, and other revolving credit and installment loans.

Average deposits in 2019 were \$1.3 trillion, up \$10.4 billion from 2018, reflecting higher other time deposits, mortgage escrow deposits and commercial deposits. Our average deposit cost in 2019 was 67 basis points, up 23 basis points from a year ago, driven by increased retail banking promotional pricing for new deposits and a continued deposit mix shift to higher cost products.

Credit Quality

Credit quality remained solid in 2019, as losses remained low and we continued to originate high-quality loans, reflecting our long-term risk focus. Net charge-offs were \$2.8 billion, or 0.29% of average loans, in 2019, flat compared with 2018.

Our commercial portfolio net charge-offs were \$652 million, or 13 basis points of average commercial loans, in 2019, compared with \$429 million, or 9 basis points, in 2018, predominantly driven by increased losses in our commercial and industrial loan portfolio. Our consumer portfolio net charge-offs were \$2.1 billion, or 48 basis points of average consumer loans, in 2019, compared with \$2.3 billion, or 52 basis points, in 2018, predominantly driven by decreased losses in our automobile portfolio, partially offset by increased losses in our credit card portfolio.

The allowance for credit losses of \$10.5 billion at December 31, 2019, decreased \$251 million from the prior year. The allowance coverage for total loans was 1.09% at December 31, 2019, compared with 1.12% at December 31, 2018. The allowance covered 3.8 times net charge-offs in 2019, compared with 3.9 in 2018. Future amounts of the allowance for credit losses will be based on a variety of factors, including loan growth, portfolio performance and general economic conditions. Our provision for credit losses in 2019 was \$2.7 billion, compared with \$1.7 billion in 2018. The provision for credit losses in both 2019 and 2018 reflected continuing solid underlying credit performance. The provision for credit losses in 2018 also reflected a higher level of credit quality improvement compared with 2019, as well as an improvement in the outlook associated with 2017 hurricane-related losses.

Nonperforming assets (NPAs) at December 31, 2019, were \$5.6 billion, down \$1.3 billion from December 31, 2018. Nonaccrual loans decreased \$1.2 billion from December 31, 2018, driven by improvement across all consumer loan categories, including a decrease in consumer nonaccruals from sales of residential real estate mortgage loans as well as the reclassification of real estate 1-4 family mortgage nonaccrual loans to mortgage loans held for sale (MLHFS) in 2019. Foreclosed assets were down \$148 million from December 31, 2018.

Capital

Our financial performance in 2019 allowed us to maintain a solid capital position with total equity of \$188.0 billion at December 31, 2019, compared with \$197.1 billion at December 31, 2018. We returned \$30.2 billion to shareholders in 2019 (\$25.8 billion in 2018) through common stock dividends and net share repurchases, and our net payout ratio (which is the ratio of (i) common stock dividends and share repurchases less issuances and stock compensation-related items, divided by (ii) net income applicable to common stock) was 168%. During 2019, we increased our quarterly common stock dividend from \$0.43 to \$0.51 per share. We continued to reduce our common share count through the repurchase of 502.4 million common

Overview (continued)

shares during the year. We expect our share count to continue to decline in 2020 as a result of anticipated net share repurchases.

We believe an important measure of our capital strength is our Common Equity Tier 1 (CET1) ratio, which was 11.14% as of December 31, 2019, down from 11.74% a year ago, but still well above our internal target of 10%. Likewise, our other regulatory capital ratios remained strong. As of December 31, 2019, our

eligible external total loss absorbing capacity (TLAC) as a percentage of total risk-weighted assets was 23.28%, compared with the required minimum of 22.0%. See the “Capital Management” section in this Report for more information regarding our capital, including the calculation of our regulatory capital amounts.

Table 1: Six-Year Summary of Selected Financial Data

(in millions, except per share amounts)	2019	2018	2017	2016	2015	2014	% Change 2019/ 2018	Five-year compound growth rate
Income statement								
Net interest income	\$ 47,231	49,995	49,557	47,754	45,301	43,527	(6)%	2
Noninterest income	37,832	36,413	38,832	40,513	40,756	40,820	4	(2)
Revenue	85,063	86,408	88,389	88,267	86,057	84,347	(2)	—
Provision for credit losses	2,687	1,744	2,528	3,770	2,442	1,395	54	14
Noninterest expense	58,178	56,126	58,484	52,377	49,974	49,037	4	3
Net income before noncontrolling interests	20,041	22,876	22,460	22,045	23,276	23,608	(12)	(3)
Less: Net income from noncontrolling interests	492	483	277	107	382	551	2	(2)
Wells Fargo net income	19,549	22,393	22,183	21,938	22,894	23,057	(13)	(3)
Earnings per common share	4.08	4.31	4.14	4.03	4.18	4.17	(5)	—
Diluted earnings per common share	4.05	4.28	4.10	3.99	4.12	4.10	(5)	—
Dividends declared per common share	1.920	1.640	1.540	1.515	1.475	1.350	17	7
Balance sheet (at year end)								
Federal funds sold and securities purchased under resale agreements	\$ 102,140	80,207	80,025	65,725	49,721	39,210	27 %	21
Debt securities	497,125	484,689	473,366	459,038	394,744	350,661	3	7
Loans	962,265	953,110	956,770	967,604	916,559	862,551	1	2
Allowance for loan losses	9,551	9,775	11,004	11,419	11,545	12,319	(2)	(5)
Goodwill	26,390	26,418	26,587	26,693	25,529	25,705	—	1
Equity securities	68,241	55,148	62,497	49,110	40,266	44,005	24	9
Assets	1,927,555	1,895,883	1,951,757	1,930,115	1,787,632	1,687,155	2	3
Deposits	1,322,626	1,286,170	1,335,991	1,306,079	1,223,312	1,168,310	3	3
Long-term debt	228,191	229,044	225,020	255,077	199,536	183,943	—	4
Wells Fargo stockholders' equity	187,146	196,166	206,936	199,581	192,998	184,394	(5)	—
Noncontrolling interests	838	900	1,143	916	893	868	(7)	(1)
Total equity	187,984	197,066	208,079	200,497	193,891	185,262	(5)	—

Table 2: Ratios and Per Common Share Data

	Year ended December 31,		
	2019	2018	2017
Profitability ratios			
Wells Fargo net income to average assets (ROA)	1.02%	1.19	1.15
Wells Fargo net income applicable to common stock to average Wells Fargo common stockholders' equity (ROE)	10.23	11.53	11.35
Return on average tangible common equity (ROTCE) (1)	12.20	13.73	13.55
Efficiency ratio (2)	68.4	65.0	66.2
Capital ratios (3)			
At year end:			
Wells Fargo common stockholders' equity to assets	8.65	9.20	9.38
Total equity to assets	9.75	10.39	10.66
Risk-based capital (4):			
Common Equity Tier 1	11.14	11.74	12.28
Tier 1 capital	12.76	13.46	14.14
Total capital	15.31	16.60	17.46
Tier 1 leverage	8.31	9.07	9.35
Average balances:			
Average Wells Fargo common stockholders' equity to average assets	9.16	9.50	9.37
Average total equity to average assets	10.33	10.77	10.64
Per common share data			
Dividend payout (5)	47.4	38.3	37.6
Book value (6)	\$ 40.31	38.06	37.44

- (1) Tangible common equity is a non-GAAP financial measure and represents total equity less preferred equity, noncontrolling interests, goodwill, certain identifiable intangible assets (other than mortgage servicing rights) and goodwill and other intangibles on nonmarketable equity securities, net of applicable deferred taxes. The methodology of determining tangible common equity may differ among companies. Management believes that return on average tangible common equity, which utilizes tangible common equity, is a useful financial measure because it enables investors and others to assess the Company's use of equity. For additional information, including a corresponding reconciliation to generally accepted accounting principles (GAAP) financial measures, see the "Capital Management – Tangible Common Equity" section in this Report.
- (2) The efficiency ratio is noninterest expense divided by total revenue (net interest income and noninterest income).
- (3) See the "Capital Management" section and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report for additional information.
- (4) The risk-based capital ratios were calculated under the lower of the Standardized or Advanced Approach determined pursuant to Basel III. Beginning January 1, 2018, the requirements for calculating common equity tier 1 and tier 1 capital, along with risk-weighted assets, became fully phased-in. Accordingly, the information presented reflects fully phased-in common equity tier 1 capital, tier 1 capital and risk-weighted assets for the years ended December 31, 2019 and 2018, but reflects all other ratios still in accordance with Transition Requirements. See the "Capital Management" section and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report for additional information.
- (5) Dividend payout ratio is dividends declared per common share as a percentage of diluted earnings per common share.
- (6) Book value per common share is common stockholders' equity divided by common shares outstanding.

Earnings Performance

Wells Fargo net income for 2019 was \$19.5 billion (\$4.05 diluted EPS), compared with \$22.4 billion (\$4.28 diluted EPS) for 2018. Net income decreased in 2019, compared with 2018, due to a \$2.8 billion decrease in net interest income, a \$943 million increase in provision for credit losses, and a \$2.1 billion increase in noninterest expense, partially offset by a \$1.4 billion increase in noninterest income, and a \$1.5 billion decrease in income tax expense. Net income in 2019 included a net discrete income tax expense of \$435 million, compared with a net discrete income tax expense of \$627 million in 2018.

Revenue, the sum of net interest income and noninterest income, was \$85.1 billion in 2019, compared with \$86.4 billion in 2018. Revenue decreased \$1.3 billion in 2019, compared with 2018, due to a decrease in net interest income, partially offset by an increase in noninterest income. Our diversified sources of revenue generated by our businesses continued to be balanced between net interest income and noninterest income. In 2019, net interest income of \$47.2 billion represented 56% of revenue, compared with \$50.0 billion (58%) in 2018. See later in this section for discussions of net interest income, noninterest income and noninterest expense.

Table 3 presents the components of net interest income on a tax-equivalent basis, noninterest income and noninterest expense as a percentage of revenue for year-over-year results. Net interest income is presented on a taxable-equivalent basis to consistently reflect income from taxable and tax-exempt loans and debt and equity securities based on a 21% federal statutory tax rate for the periods ended December 31, 2019 and 2018, and 35% for the period ended December 31, 2017.

For a discussion of our 2018 financial results compared with 2017, see the "Earnings Performance" section of our Annual Report on Form 10-K for the year ended December 31, 2018.

Table 3: Net Interest Income, Noninterest Income and Noninterest Expense as a Percentage of Revenue

(in millions)	Year ended December 31,					
	2019	% of revenue	2018	% of revenue	2017	% of revenue
Interest income (on a taxable-equivalent basis)						
Debt securities	\$ 15,456	18%	\$ 14,947	17%	\$ 14,084	16%
Mortgage loans held for sale (MLHFS)	813	1	777	1	786	1
Loans held for sale (LHFS)	79	—	140	—	50	—
Loans	44,253	52	44,086	51	41,551	47
Equity securities	966	1	999	1	821	1
Other interest income	5,129	7	4,359	6	2,941	3
Total interest income (on a taxable-equivalent basis)	66,696	79	65,308	76	60,233	68
Interest expense (on a taxable-equivalent basis)						
Deposits	8,635	10	5,622	7	3,013	3
Short-term borrowings	2,317	3	1,719	2	761	1
Long-term debt	7,350	9	6,703	8	5,157	6
Other interest expense	551	—	610	—	424	1
Total interest expense (on a taxable-equivalent basis)	18,853	22	14,654	17	9,355	11
Net interest income (on a taxable-equivalent basis)	47,843	57	50,654	59	50,878	57
Taxable-equivalent adjustment	(612)	(1)	(659)	(1)	(1,321)	(1)
Net interest income (A)	47,231	56	49,995	58	49,557	56
Noninterest income						
Service charges on deposit accounts	4,798	6	4,716	5	5,111	6
Trust and investment fees (1)	14,072	17	14,509	17	14,495	16
Card fees	4,016	5	3,907	5	3,960	4
Other fees (1)	3,084	4	3,384	4	3,557	4
Mortgage banking (1)	2,715	3	3,017	3	4,350	5
Insurance	378	—	429	—	1,049	1
Net gains from trading activities	993	1	602	1	542	1
Net gains on debt securities	140	—	108	—	479	1
Net gains from equity securities	2,843	3	1,515	2	1,779	2
Lease income	1,612	2	1,753	2	1,907	2
Other (1)	3,181	3	2,473	3	1,603	2
Total noninterest income (B)	37,832	44	36,413	42	38,832	44
Noninterest expense						
Salaries	18,382	22	17,834	21	17,363	20
Commission and incentive compensation	10,828	13	10,264	12	10,442	12
Employee benefits	5,874	7	4,926	6	5,566	6
Technology and equipment	2,763	3	2,444	3	2,237	3
Net occupancy	2,945	3	2,888	3	2,849	3
Core deposit and other intangibles	108	—	1,058	1	1,152	1
FDIC and other deposit assessments	526	1	1,110	1	1,287	1
Operating losses	4,321	5	3,124	4	5,492	6
Outside professional services	3,198	4	3,306	4	3,813	4
Other (2)	9,233	10	9,172	10	8,283	10
Total noninterest expense	58,178	68	56,126	65	58,484	66
Revenue (A) + (B)	\$ 85,063		\$ 86,408		\$ 88,389	

(1) See Table 7 – Noninterest Income in this Report for additional detail.

(2) See Table 8 – Noninterest Expense in this Report for additional detail.

Earnings Performance (continued)

Net Interest Income

Net interest income is the interest earned on debt securities, loans (including yield-related loan fees) and other interest-earning assets minus the interest paid on deposits, short-term borrowings and long-term debt. The net interest margin is the average yield on earning assets minus the average interest rate paid for deposits and our other sources of funding.

Net interest income and the net interest margin in any one period can be significantly affected by a variety of factors including the mix and overall size of our earning assets portfolio and the cost of funding those assets. In addition, variable sources of interest income, such as loan fees, periodic dividends, and collection of interest on nonaccrual loans, can fluctuate from period to period.

Net interest income on a taxable-equivalent basis was \$47.8 billion in 2019, compared with \$50.7 billion in 2018. Net interest margin on a taxable-equivalent basis was 2.73% in 2019, compared with 2.91% in 2018. The decrease in both net interest income and net interest margin in 2019, compared with 2018, was driven by unfavorable impacts of repricing due to a flattening yield curve and mix of earning assets and funding sources, including sales of high yielding Pick-a-Pay loans, as well as higher costs on promotional retail banking deposits.

Table 4 presents the components of earning assets and funding sources as a percentage of earning assets to provide a more meaningful analysis of year-over-year changes that influenced net interest income.

Deposits are an important low-cost source of funding and affect both net interest income and the net interest margin. Deposits include noninterest-bearing deposits, interest-bearing checking, market rate and other savings, savings certificates, other time deposits, and deposits in non-U.S. offices. Average deposits were \$1.3 trillion in 2019, flat compared with 2018, and represented 135% of average loans in both 2019 and 2018. Average deposits were 73% of average earning assets in both 2019 and 2018. Our average deposit cost in 2019 was 67 basis points, up 23 basis points from a year ago, driven by increased retail banking promotional pricing for new deposits and a continued deposit mix shift to higher cost products.

Table 5 presents the individual components of net interest income and the net interest margin. Net interest income and the net interest margin are presented on a taxable-equivalent basis in Table 5 to consistently reflect income from taxable and tax-exempt loans and debt and equity securities based on a 21% federal statutory tax rate for the periods ended December 31, 2019 and 2018, and 35% for the period ended December 31, 2017.

Table 4: Average Earning Assets and Funding Sources as a Percentage of Average Earning Assets

(in millions)	Year ended December 31,					
	2019		2018		Change from prior year	% Change from prior year
	Average balance	% of earning assets	Average balance	% of earning assets		
Earning assets						
Interest-earning deposits with banks	\$ 135,741	8%	\$ 156,366	9%	\$ (20,625)	(13)%
Federal funds sold and securities purchased under resale agreements	99,286	6	78,547	5	20,739	26
Debt securities:						
Trading debt securities	93,655	5	83,526	5	10,129	12
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	15,293	1	6,618	—	8,675	131
Securities of U.S. states and political subdivisions	44,203	3	47,884	3	(3,681)	(8)
Mortgage-backed securities:						
Federal agencies	154,160	9	156,052	9	(1,892)	(1)
Residential and commercial	5,363	—	7,769	—	(2,406)	(31)
Total mortgage-backed securities	159,523	9	163,821	9	(4,298)	(3)
Other debt securities	43,675	2	46,875	3	(3,200)	(7)
Total available-for-sale debt securities	262,694	15	265,198	15	(2,504)	(1)
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	44,850	3	44,735	3	115	—
Securities of U.S. states and political subdivisions	8,644	1	6,253	—	2,391	38
Federal agency and mortgage-backed securities	95,559	5	94,216	5	1,343	1
Other debt securities	52	—	361	—	(309)	(86)
Total held-to-maturity debt securities	149,105	9	145,565	8	3,540	2
Total debt securities	505,454	29	494,289	28	11,165	2
Mortgage loans held for sale (1)	19,808	1	18,394	1	1,414	8
Loans held for sale (1)	1,708	—	2,526	—	(818)	(32)
Loans:						
Commercial loans:						
Commercial and industrial – U.S.	284,888	16	275,656	16	9,232	3
Commercial and industrial – Non-U.S.	64,274	4	60,718	4	3,556	6
Real estate mortgage	121,813	7	122,947	7	(1,134)	(1)
Real estate construction	21,183	1	23,609	1	(2,426)	(10)
Lease financing	19,302	1	19,392	1	(90)	—
Total commercial loans	511,460	29	502,322	29	9,138	2
Consumer loans:						
Real estate 1-4 family first mortgage	288,059	16	284,178	16	3,881	1
Real estate 1-4 family junior lien mortgage	31,989	2	36,687	2	(4,698)	(13)
Credit card	38,865	2	36,780	2	2,085	6
Automobile	45,901	3	48,115	3	(2,214)	(5)
Other revolving credit and installment	34,682	2	37,115	2	(2,433)	(7)
Total consumer loans	439,496	25	442,875	25	(3,379)	(1)
Total loans (1)	950,956	54	945,197	54	5,759	1
Equity securities	35,930	2	38,092	2	(2,162)	(6)
Other	5,579	—	5,071	1	508	10
Total earning assets	\$ 1,754,462	100%	\$ 1,738,482	100%	\$ 15,980	1%
Funding sources						
Deposits:						
Interest-bearing checking	\$ 59,121	4%	\$ 63,243	4%	\$ (4,122)	(7)%
Market rate and other savings	705,957	40	684,882	39	21,075	3
Savings certificates	30,266	2	20,653	1	9,613	47
Other time deposits	93,368	5	84,822	5	8,546	10
Deposits in non-U.S. offices	53,438	3	63,945	4	(10,507)	(16)
Total interest-bearing deposits	942,150	54	917,545	53	24,605	3
Short-term borrowings	115,337	7	104,267	6	11,070	11
Long-term debt	232,491	13	224,268	13	8,223	4
Other liabilities	25,771	1	27,648	1	(1,877)	(7)
Total interest-bearing liabilities	1,315,749	75	1,273,728	73	42,021	3
Portion of noninterest-bearing funding sources	438,713	25	464,754	27	(26,041)	(6)
Total funding sources	\$ 1,754,462	100%	\$ 1,738,482	100%	\$ 15,980	1%
Noninterest-earning assets						
Cash and due from banks	\$ 19,558		18,777		\$ 781	4%
Goodwill	26,409		26,453		(44)	—
Other	113,015		105,180		7,835	7
Total noninterest-earning assets	\$ 158,982		150,410		\$ 8,572	6%
Noninterest-bearing funding sources						
Deposits	\$ 344,111		358,312		\$ (14,201)	(4)%
Other liabilities	55,963		53,496		2,467	5
Total equity	197,621		203,356		(5,735)	(3)
Noninterest-bearing funding sources used to fund earning assets	(438,713)		(464,754)		26,041	(6)
Net noninterest-bearing funding sources	\$ 158,982		150,410		\$ 8,572	6%
Total assets	\$ 1,913,444		1,888,892		\$ 24,552	1%

(1) Nonaccrual loans are included in their respective loan categories.

Earnings Performance (continued)

Table 5: Average Balances, Yields and Rates Paid (Taxable-Equivalent Basis) (1)

(in millions)	2019			2018			2017		
	Average balance	Yields/rates	Interest income/expense	Average balance	Yields/rates	Interest income/expense	Average balance	Yields/rates	Interest income/expense
Earning assets									
Interest-earning deposits with banks	\$ 135,741	2.12%	\$ 2,875	156,366	1.82%	\$ 2,854	201,864	1.07%	\$ 2,162
Federal funds sold and securities purchased under resale agreements	99,286	2.18	2,164	78,547	1.82	1,431	74,697	0.98	735
Debt securities (2):									
Trading debt securities	93,655	3.36	3,149	83,526	3.42	2,856	74,475	3.16	2,356
Available-for-sale debt securities:									
Securities of U.S. Treasury and federal agencies	15,293	2.07	316	6,618	1.70	112	15,966	1.49	239
Securities of U.S. states and political subdivisions	44,203	3.87	1,709	47,884	3.77	1,806	52,658	3.95	2,082
Mortgage-backed securities:									
Federal agencies	154,160	2.85	4,397	156,052	2.79	4,348	145,310	2.60	3,782
Residential and commercial	5,363	4.19	225	7,769	4.62	358	11,839	5.33	631
Total mortgage-backed securities	159,523	2.90	4,622	163,821	2.87	4,706	157,149	2.81	4,413
Other debt securities	43,675	4.23	1,846	46,875	4.22	1,980	48,714	3.68	1,794
Total available-for-sale debt securities	262,694	3.23	8,493	265,198	3.24	8,604	274,487	3.11	8,528
Held-to-maturity debt securities:									
Securities of U.S. Treasury and federal agencies	44,850	2.19	982	44,735	2.19	980	44,705	2.19	979
Securities of U.S. states and political subdivisions	8,644	3.97	343	6,253	4.34	271	6,268	5.32	334
Federal agency and other mortgage-backed securities	95,559	2.60	2,487	94,216	2.36	2,221	78,330	2.34	1,832
Other debt securities	52	3.71	2	361	4.00	15	2,194	2.50	55
Total held-to-maturity debt securities	149,105	2.56	3,814	145,565	2.40	3,487	131,497	2.43	3,200
Total debt securities	505,454	3.06	15,456	494,289	3.02	14,947	480,459	2.93	14,084
Mortgage loans held for sale (3)	19,808	4.10	813	18,394	4.22	777	20,780	3.78	786
Loans held for sale (3)	1,708	4.60	79	2,526	5.56	140	1,487	3.40	50
Loans:									
Commercial loans:									
Commercial and industrial – U.S.	284,888	4.25	12,107	275,656	4.16	11,465	272,034	3.75	10,196
Commercial and industrial – Non-U.S.	64,274	3.71	2,385	60,718	3.53	2,143	57,198	2.86	1,639
Real estate mortgage	121,813	4.40	5,356	122,947	4.29	5,279	129,990	3.74	4,859
Real estate construction	21,183	5.17	1,095	23,609	4.94	1,167	24,813	4.10	1,017
Lease financing	19,302	4.52	873	19,392	4.74	919	19,128	3.74	715
Total commercial loans	511,460	4.27	21,816	502,322	4.18	20,973	503,163	3.66	18,426
Consumer loans:									
Real estate 1-4 family first mortgage	288,059	3.81	10,974	284,178	4.04	11,481	277,751	4.03	11,206
Real estate 1-4 family junior lien mortgage	31,989	5.63	1,800	36,687	5.38	1,975	42,780	4.82	2,062
Credit card	38,865	12.58	4,889	36,780	12.72	4,678	35,600	12.23	4,355
Automobile	45,901	5.15	2,362	48,115	5.18	2,491	57,900	5.34	3,094
Other revolving credit and installment	34,682	6.95	2,412	37,115	6.70	2,488	38,935	6.18	2,408
Total consumer loans	439,496	5.11	22,437	442,875	5.22	23,113	452,966	5.11	23,125
Total loans (3)	950,956	4.65	44,253	945,197	4.66	44,086	956,129	4.35	41,551
Equity securities	35,930	2.69	966	38,092	2.62	999	36,105	2.27	821
Other	5,579	1.62	90	5,071	1.46	74	5,069	0.85	44
Total earning assets	\$ 1,754,462	3.80%	\$ 66,696	1,738,482	3.76%	\$ 65,308	1,776,590	3.40%	\$ 60,233
Funding sources									
Deposits:									
Interest-bearing checking	\$ 59,121	1.33%	\$ 789	63,243	0.96%	\$ 606	49,474	0.49%	\$ 242
Market rate and other savings	705,957	0.59	4,132	684,882	0.31	2,157	682,053	0.14	983
Savings certificates	30,266	1.59	481	20,653	0.57	118	22,190	0.30	67
Other time deposits	93,368	2.46	2,295	84,822	2.25	1,906	61,625	1.43	880
Deposits in non-U.S. offices	53,438	1.75	938	63,945	1.30	835	123,816	0.68	841
Total interest-bearing deposits	942,150	0.92	8,635	917,545	0.61	5,622	939,158	0.32	3,013
Short-term borrowings	115,337	2.01	2,317	104,267	1.65	1,719	98,922	0.77	761
Long-term debt	232,491	3.16	7,350	224,268	2.99	6,703	246,195	2.09	5,157
Other liabilities	25,771	2.13	551	27,648	2.21	610	21,872	1.94	424
Total interest-bearing liabilities	1,315,749	1.43	18,853	1,273,728	1.15	14,654	1,306,147	0.72	9,355
Portion of noninterest-bearing funding sources	438,713	—	—	464,754	—	—	470,443	—	—
Total funding sources	\$ 1,754,462	1.07	18,853	1,738,482	0.85	14,654	1,776,590	0.53	9,355
Net interest margin and net interest income on a taxable-equivalent basis (4)		2.73%	\$ 47,843		2.91%	\$ 50,654		2.87%	\$ 50,878
Noninterest-earning assets									
Cash and due from banks	\$ 19,558			18,777			18,622		
Goodwill	26,409			26,453			26,629		
Other	113,015			105,180			111,164		
Total noninterest-earning assets	\$ 158,982			150,410			156,415		
Noninterest-bearing funding sources									
Deposits	\$ 344,111			358,312			365,464		
Other liabilities	55,963			53,496			55,740		
Total equity	197,621			203,356			205,654		
Noninterest-bearing funding sources used to fund earning assets	(438,713)			(464,754)			(470,443)		
Net noninterest-bearing funding sources	\$ 158,982			150,410			156,415		
Total assets	\$ 1,913,444			1,888,892			1,933,005		
Average prime rate		5.28%			4.91%			4.10%	
Average three-month London Interbank Offered Rate (LIBOR)		2.33			2.31			1.26	

(1) Yields/rates and amounts include the effects of hedge and risk management activities associated with the respective asset and liability categories.

(2) Yields/rates are based on interest income/expense amounts for the period. The average balance amounts represent amortized cost for the periods presented.

(3) Nonaccrual loans and related income are included in their respective loan categories.

(4) Includes taxable-equivalent adjustments of \$612 million, \$659 million and \$1.3 billion for the years ended December 31, 2019, 2018 and 2017, respectively, predominantly related to tax-exempt income on certain loans and securities.

Table 6 allocates the changes in net interest income on a taxable-equivalent basis to changes in either average balances or average rates for both interest-earning assets and interest-bearing liabilities. Because of the numerous simultaneous volume and rate changes during any period, it is not possible to

precisely allocate such changes between volume and rate. For this table, changes that are not solely due to either volume or rate are allocated to these categories on a pro-rata basis based on the absolute value of the change due to average volume and average rate.

Table 6: Analysis of Changes in Net Interest Income

(in millions)	2019 over 2018			Year ended December 31, 2018 over 2017		
	Volume	Rate	Total	Volume	Rate	Total
Increase (decrease) in interest income:						
Interest-earning deposits with banks	\$ (407)	428	21	(569)	1,261	692
Federal funds sold and securities purchased under resale agreements	419	314	733	40	656	696
Debt securities:						
Trading debt securities	343	(50)	293	298	202	500
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	175	29	204	(157)	30	(127)
Securities of U.S. states and political subdivisions	(143)	46	(97)	(184)	(92)	(276)
Mortgage-backed securities:						
Federal agencies	(50)	99	49	285	281	566
Residential and commercial	(103)	(30)	(133)	(197)	(76)	(273)
Total mortgage-backed securities	(153)	69	(84)	88	205	293
Other debt securities	(139)	5	(134)	(70)	256	186
Total available-for-sale debt securities	(260)	149	(111)	(323)	399	76
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	2	—	2	1	—	1
Securities of U.S. states and political subdivisions	97	(25)	72	(1)	(62)	(63)
Federal agency mortgage-backed securities	33	233	266	373	16	389
Other debt securities	(12)	(1)	(13)	(62)	22	(40)
Total held-to-maturity debt securities	120	207	327	311	(24)	287
Mortgage loans held for sale	59	(23)	36	(95)	86	(9)
Loans held for sale	(40)	(21)	(61)	47	43	90
Commercial loans:						
Commercial and industrial – U.S.	390	252	642	138	1,131	1,269
Commercial and industrial – Non-U.S.	130	112	242	105	399	504
Real estate mortgage	(51)	128	77	(272)	692	420
Real estate construction	(124)	52	(72)	(51)	201	150
Lease financing	(4)	(42)	(46)	10	194	204
Total commercial loans	341	502	843	(70)	2,617	2,547
Consumer loans:						
Real estate 1-4 family first mortgage	155	(662)	(507)	248	27	275
Real estate 1-4 family junior lien mortgage	(263)	88	(175)	(312)	225	(87)
Credit card	262	(51)	211	146	177	323
Automobile	(115)	(14)	(129)	(512)	(91)	(603)
Other revolving credit and installment	(167)	91	(76)	(116)	196	80
Total consumer loans	(128)	(548)	(676)	(546)	534	(12)
Total loans	213	(46)	167	(616)	3,151	2,535
Equity securities	(59)	26	(33)	47	131	178
Other	7	9	16	—	30	30
Total increase in interest income	395	993	1,388	(860)	5,935	5,075
Increase (decrease) in interest expense:						
Deposits:						
Interest-bearing checking	(42)	225	183	82	282	364
Market rate and other savings	65	1,910	1,975	4	1,170	1,174
Savings certificates	75	288	363	(5)	56	51
Other time deposits	202	187	389	407	619	1,026
Deposits in non-U.S. offices	(152)	255	103	(534)	528	(6)
Total interest-bearing deposits	148	2,865	3,013	(46)	2,655	2,609
Short-term borrowings	196	402	598	43	915	958
Long-term debt	254	393	647	(495)	2,041	1,546
Other liabilities	(38)	(21)	(59)	122	64	186
Total increase in interest expense	560	3,639	4,199	(376)	5,675	5,299
Increase (decrease) in net interest income on a taxable-equivalent basis	\$ (165)	(2,646)	(2,811)	(484)	260	(224)

Earnings Performance (continued)

Noninterest Income

Table 7: Noninterest Income

(in millions)	Year ended December 31,		
	2019	2018	2017
Service charges on deposit accounts	\$ 4,798	4,716	5,111
Trust and investment fees:			
Brokerage advisory, commissions and other fees	9,237	9,436	9,358
Trust and investment management	3,038	3,316	3,372
Investment banking	1,797	1,757	1,765
Total trust and investment fees	14,072	14,509	14,495
Card fees	4,016	3,907	3,960
Other fees:			
Lending related charges and fees	1,379	1,526	1,568
Cash network fees	452	481	506
Commercial real estate brokerage commissions	358	468	462
Wire transfer and other remittance fees	474	477	448
All other fees	421	432	573
Total other fees	3,084	3,384	3,557
Mortgage banking:			
Servicing income, net	522	1,373	1,427
Net gains on mortgage loan origination/sales activities	2,193	1,644	2,923
Total mortgage banking	2,715	3,017	4,350
Insurance	378	429	1,049
Net gains from trading activities	993	602	542
Net gains on debt securities	140	108	479
Net gains from equity securities	2,843	1,515	1,779
Lease income	1,612	1,753	1,907
Life insurance investment income	658	651	594
All other	2,523	1,822	1,009
Total	\$ 37,832	36,413	38,832

Noninterest income of \$37.8 billion represented 44% of revenue for 2019, compared with \$36.4 billion, or 42%, for 2018 and \$38.8 billion, or 44%, for 2017. The increase in noninterest income in 2019, compared with 2018, was predominantly due to higher net gains from equity securities (including higher deferred compensation plan investment results, which are offset in employee benefits expense), higher all other income, and higher net gains from trading activities. These increases in 2019, compared with 2018, were partially offset by lower trust and investment fees, mortgage banking income, and other fees. The decline in noninterest income in 2018, compared with 2017, was predominantly due to lower net gains on mortgage loan origination/sales activities driven by decreased origination volumes and margins, lower insurance income due to the sale of Wells Fargo Insurance Services in fourth quarter 2017, lower service charges on deposit accounts, lower gains on debt securities, and lower deferred compensation plan investment results (offset in employee benefits expense). These decreases in 2018, compared with 2017, were partially offset by higher gains from equity securities and higher all other income. For more information on our performance obligations and the nature of services performed for certain of our revenues discussed below, see Note 22 (Revenue from Contracts with Customers) to Financial Statements in this Report.

Service charges on deposit accounts increased to \$4.8 billion in 2019, compared with \$4.7 billion in 2018, predominantly due to higher overdraft fees resulting from increased consumer payment transactions, partially offset by the impact of a higher earnings credit rate applied to commercial accounts due to higher interest rates.

Brokerage advisory, commissions and other fees decreased to \$9.2 billion in 2019, compared with \$9.4 billion in 2018, due to lower asset-based fees and lower transactional revenue. Retail

brokerage client assets totaled \$1.6 trillion at December 31, 2019, compared with \$1.5 trillion at December 31, 2018. Asset-based fees are calculated on the market value of the assets as of the beginning of each quarter. All retail brokerage services are provided by our WIM operating segment. For additional information on retail brokerage client assets, see the discussion and Tables 9d and 9e in the “Operating Segment Results – Wealth and Investment Management – Retail Brokerage Client Assets” section in this Report.

Trust and investment management fees decreased to \$3.0 billion in 2019, compared with \$3.3 billion in 2018, largely driven by lower trust fees due to the sale of our Institutional Retirement and Trust (IRT) business in 2019.

Our assets under management (AUM), including IRT client assets still on our platform, totaled \$705.9 billion at December 31, 2019, compared with \$638.3 billion at December 31, 2018. Substantially all of our AUM is managed by our Wealth and Investment Management (WIM) operating segment. Our assets under administration (AUA), including IRT client assets still on our platform, totaled \$1.8 trillion at December 31, 2019, compared with \$1.7 trillion at December 31, 2018. We had AUM and AUA associated with the IRT business of \$21 billion and \$915 billion, respectively, at December 31, 2019. No IRT client assets were transitioned to the buyer’s platform as of December 31, 2019.

We closed the sale of our IRT business on July 1, 2019. We will continue to administer client assets at the direction of the buyer for up to 24 months from the closing date pursuant to a transition services agreement. The buyer will receive post-closing revenue from the client assets and will pay us a fee for certain costs that we incur to administer the client assets during the transition period. The transition services fee will be recognized as other noninterest income, and the expenses we incur will be recognized in the same manner as they were prior to the close of the sale. Transition period revenue is expected to approximate transition period expenses and is subject to downward adjustment as client assets transition to the buyer’s platform.

Additional information regarding our WIM operating segment AUM is provided in Table 9f and the related discussion in the “Operating Segment Results – Wealth and Investment Management – Trust and Investment Client Assets Under Management” section in this Report.

Other fees decreased to \$3.1 billion in 2019 from \$3.4 billion in 2018, predominantly driven by the sale of our commercial real estate brokerage business (Eastdil Secured (Eastdil)) on October 1, 2019 and lower lending related charges and fees.

Mortgage banking income, consisting of net servicing income and net gains on loan origination/sales activities, totaled \$2.7 billion in 2019, compared with \$3.0 billion in 2018. For more information, see Note 11 (Mortgage Banking Activities) to Financial Statements in this Report.

Net servicing income was \$522 million in 2019, compared with \$1.4 billion in 2018, due to a decrease in net servicing fees and changes in the fair value of mortgage servicing rights (MSRs). Net servicing fees decreased \$369 million from 2018, primarily driven by a decrease in contractually specified fees as a result of prepayments and sales of MSRs. In addition to servicing fees, net servicing income includes amortization of commercial MSRs, changes in the fair value of residential MSRs, as well as changes in the fair value of derivatives (economic hedges) used to hedge the residential MSRs. The total fair value of our residential MSRs declined in 2019, compared with 2018, driven by lower mortgage interest rates and higher prepayments. The net MSR valuation loss on our residential MSRs increased in

2019, compared with 2018, due to a decrease in hedge carry income from a flatter yield curve environment in 2019. Table 7a presents the components of the market-related valuation changes to our residential MSRs, net of hedge results.

Table 7a: Market-Related Valuation Changes on Residential MSRs, Net of Hedge Results

(in millions)	Year ended December 31,		
	2019	2018	2017
MSR valuation gain (loss)	\$ (2,569)	960	(126)
Net derivative gains (losses) from economic hedges of residential MSRs	2,318	(1,072)	413
Net MSR valuation gain (loss)	\$ (251)	(112)	287

Our portfolio of loans serviced for others was \$1.6 trillion at December 31, 2019, and \$1.7 trillion at December 31, 2018. At December 31, 2019, the ratio of combined residential and commercial MSRs to related loans serviced for others was 0.79%, compared with 0.94% at December 31, 2018. See the “Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk” section in this Report for additional information regarding our MSRs risks and hedging approach.

Net gains on mortgage loan origination/sales activities was \$2.2 billion in 2019, compared with \$1.6 billion in 2018. The increase in 2019, compared with 2018, was primarily due to increases in origination volumes and margins. The production margin on residential held-for-sale mortgage loan originations, which represents net gains on residential mortgage loan origination/sales activities divided by total residential held-for-sale mortgage loan originations, provides a measure of the profitability of our residential mortgage origination activity. Table 7b presents the information used in determining the production margin.

Table 7b: Selected Mortgage Production Data

		Year ended December 31,		
		2019	2018	2017
Net gains on mortgage loan origination/sales activities (in millions):				
Residential	(A)	\$ 1,518	1,174	2,140
Commercial		337	265	358
Residential pipeline and unsold/repurchased loan management (1)		338	205	425
Total		\$ 2,193	1,644	2,923
Residential real estate originations (in billions):				
Held-for-sale	(B)	\$ 135	132	160
Held-for-investment		69	45	52
Total		\$ 204	177	212
Production margin on residential held-for-sale mortgage originations	(A)/(B)	1.12%	0.89	1.34

(1) Primarily includes the results of Government National Mortgage Association (GNMA) loss mitigation activities, interest rate management activities and changes in estimate to the liability for mortgage loan repurchase losses.

The production margin was 1.12% for 2019, compared with 0.89% for 2018. The increase in the production margin in 2019, compared with 2018, was due to higher margins in both retail and correspondent production channels and a shift to more retail origination volume, which has a higher production margin.

Mortgage applications were \$311 billion in 2019, compared with \$230 billion in 2018. The real estate 1-4 family first mortgage unclosed pipeline was \$33 billion at December 31, 2019, compared with \$18 billion at December 31, 2018. For additional information about our mortgage banking activities and results, see the “Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk” section and Note 11 (Mortgage Banking Activities) and Note 19 (Fair Values of Assets and Liabilities) to Financial Statements in this Report.

Net gains from trading activities, which reflect unrealized changes in fair value of our trading positions and realized gains and losses, were \$993 million in 2019, compared with \$602 million in 2018. The increase in 2019, compared with 2018, reflected higher trading volumes for rates and commodities, credit, and residential mortgage-backed securities, partially offset by lower equity and foreign exchange trading income. Net gains from trading activities exclude interest and dividend income and expense on trading securities, which are reported within interest income from debt and equity securities and other interest income. For additional information about trading activities, see the “Risk Management – Asset/Liability Management – Market Risk – Trading Activities” section and Note 4 (Trading Activities) to Financial Statements in this Report.

Net gains on debt and equity securities totaled \$3.0 billion for 2019 and \$1.6 billion for 2018. The increase in 2019 was predominantly driven by higher deferred compensation gains (offset in employee benefits expense) and higher unrealized gains on equity securities, partially offset by lower net realized gains from nonmarketable equity securities. Table 8a presents results for our deferred compensation plan and related investments. Net gains on debt and equity securities also included other-than-temporary impairment (OTTI) write-downs of \$308 million for 2019 and \$380 million for 2018. The decrease in OTTI in 2019 reflected a \$214 million impairment taken in 2018 related to the sale of our ownership stake in The Rock Creek Group, LP (RockCreek), partially offset by higher write-downs in our investment portfolio in 2019.

Lease income was \$1.6 billion in 2019, compared with \$1.8 billion in 2018. The decrease in 2019, compared with 2018, was driven by reductions in the size of the equipment leasing portfolio.

All other income was \$2.5 billion in 2019, compared with \$1.8 billion in 2018. All other income includes losses on low income housing tax credit investments (excluding related tax credits recorded in income tax expense), foreign currency adjustments, income from investments accounted for under the equity method, hedge accounting results related to hedges of foreign currency risk, and the results of certain economic hedges, any of which can cause decreases and net losses in other income. The increase in all other income in 2019, compared with 2018, was predominantly driven by pre-tax gains on the sales of our IRT business, Eastdil, and Business Payroll Services, partially offset by lower gains from the sales of purchased credit-impaired (PCI) loans in 2019, as well as higher losses on low income housing tax credit investments in 2019.

Earnings Performance (continued)

Noninterest Expense

Table 8: Noninterest Expense

(in millions)	Year ended December 31,		
	2019	2018	2017
Salaries	\$ 18,382	17,834	17,363
Commission and incentive compensation	10,828	10,264	10,442
Employee benefits	5,874	4,926	5,566
Technology and equipment	2,763	2,444	2,237
Net occupancy (1)	2,945	2,888	2,849
Core deposit and other intangibles	108	1,058	1,152
FDIC and other deposit assessments	526	1,110	1,287
Operating losses	4,321	3,124	5,492
Outside professional services	3,198	3,306	3,813
Contract services (2)	2,489	2,192	1,638
Leases (3)	1,155	1,334	1,351
Advertising and promotion	1,076	857	614
Outside data processing	673	660	891
Travel and entertainment	580	618	687
Postage, stationery and supplies	518	515	544
Telecommunications	367	361	364
Foreclosed assets	163	188	251
Insurance	100	101	100
All other (2)	2,112	2,346	1,843
Total	\$ 58,178	56,126	58,484

(1) Represents expenses for both leased and owned properties.

(2) The amount for 2017 has been revised to conform with the current period presentation whereby temporary help is included in contract services rather than in all other noninterest expense.

(3) Represents expenses for assets we lease to customers.

Noninterest expense was \$58.2 billion in 2019, up 4% from \$56.1 billion in 2018, which was down 4% from \$58.5 billion in 2017. The increase in 2019, compared with 2018, was driven by higher personnel expenses, operating losses, technology and equipment, and advertising and promotion expense, partially offset by lower core deposit and other intangibles expense, Federal Deposit Insurance Corporation (FDIC), leases, and other expense. The decrease in 2018, compared with 2017, was driven by lower operating losses from a decline in litigation accruals, lower personnel expenses, lower outside data processing, and lower FDIC expense, partially offset by higher advertising and promotion, technology and equipment, and other expense.

Personnel expenses, which include salaries, commissions, incentive compensation and employee benefits, were up \$2.1 billion, or 6%, in 2019, compared with 2018, due to higher deferred compensation costs (offset in net gains from equity securities), higher salaries driven by the impact of staffing mix changes and annual salary increases, as well as higher incentive compensation and commissions. The increase in incentive compensation and commissions was due to increased revenue from mortgage banking originations, market sensitive businesses (trading, debt and equity securities activities) and investment banking, partially offset by lower brokerage fees. Table 8a presents results for our deferred compensation plan and related investments.

Table 8a: Deferred Compensation Plan and Related Investments

(in millions)	Year ended December 31,	
	2019	2018
Net interest income	\$ 70	60
Net gains (losses) from equity securities	664	(303)
Total revenue (losses) from deferred compensation plan investments	734	(243)
Employee benefits expense (1)	739	(242)
Income (loss) before income tax expense	\$ (5)	(1)

(1) Represents change in deferred compensation plan liability.

Technology and equipment expense was up 13% in 2019, compared with 2018, due to higher impairment expenses on capitalized software and computer software licensing and maintenance costs, reflecting the strategic reassessment of technology projects in WIM.

Core deposit and other intangibles expense was down 90% in 2019, compared with 2018, due to lower amortization expense reflecting the end of the 10-year amortization period on Wachovia intangibles.

FDIC and other deposit assessments were down 53% in 2019, compared with 2018, due to the completion of the FDIC surcharge which ended September 30, 2018.

Operating losses were up \$1.2 billion, or 38%, in 2019, compared with 2018, due to higher litigation accruals for a variety of matters, including previously disclosed retail sales practices matters, partially offset by lower remediation expense.

Outside professional and contract services expense was up 3% in 2019, compared with 2018, reflecting an increase in project spending, partially offset by lower legal expense.

Leases expense was down 13% in 2019, compared with 2018, driven by reductions in the size of the operating lease portfolio.

Advertising and promotion expense was up 26% in 2019, compared with 2018, due to increases in marketing and brand campaign volumes.

All other noninterest expense was down 10% in 2019, compared with 2018, due to a sales tax refund in 2019, higher gains on the sale of corporate properties in 2019, compared with 2018, and pension plan settlement expense in 2018 that did not recur in 2019.

Income Tax Expense

Our effective income tax rate in 2019 was 17.5%, compared with 20.2% in 2018. The 2019 and 2018 effective income tax rates reflected the non-tax-deductible treatment of certain litigation accruals. The 2018 effective income tax rate also reflected income tax expense related to the reconsideration of reserves for state income taxes following the U.S. Supreme Court decision in *South Dakota v. Wayfair, Inc.* and the recognition of \$164 million of income tax expense associated with the final re-measurement of our initial estimates for the impacts of the Tax Cuts & Jobs Act (Tax Act). See Note 24 (Income Taxes) to Financial Statements in this Report for additional information about our income taxes.

Operating Segment Results

As of December 31, 2019, we were organized for management reporting purposes into three operating segments: Community Banking; Wholesale Banking; and Wealth and Investment Management (WIM). These segments are defined by product type and customer segment and their results are based on our management reporting process. The management reporting process is based on U.S. GAAP with specific adjustments, such as for funds transfer pricing for asset/liability management, for shared revenues and expenses, and tax-equivalent adjustments to consistently reflect income from taxable and tax-exempt sources. On February 11, 2020, we announced a new organizational structure with five principal lines of business: Consumer and Small Business Banking; Consumer Lending; Commercial Banking; Corporate and Investment Banking; and Wealth and Investment Management. This new organizational

structure is intended to help drive operating, control, and business performance. The Company is currently in the process of transitioning to this new organizational structure, including identifying leadership for some of these principal business lines and aligning management reporting and allocation methodologies. These changes will not impact the consolidated financial results of the Company, but are expected to result in changes to our operating segments. We will update our operating segment disclosures, including comparative financial results, when the Company completes its transition and is managed in accordance with the new organizational structure. Table 9 and the following discussion present our results by operating segment. For additional description of our operating segments, including additional financial information and the underlying management reporting process, see Note 27 (Operating Segments) to Financial Statements in this Report.

Table 9: Operating Segment Results – Highlights

(in millions, except average balances which are in billions)	Year ended December 31,				
	Community Banking	Wholesale Banking	Wealth and Investment Management	Other (1)	Consolidated Company
2019					
Revenue	\$ 45,316	27,677	17,341	(5,271)	85,063
Provision (reversal of provision) for credit losses	2,319	378	5	(15)	2,687
Net income (loss)	7,398	10,696	2,713	(1,258)	19,549
Average loans	\$ 459.4	475.3	75.6	(59.3)	951.0
Average deposits	782.0	422.5	146.0	(64.2)	1,286.3
2018					
Revenue	\$ 46,913	28,706	16,376	(5,587)	86,408
Provision (reversal of provision) for credit losses	1,783	(58)	(5)	24	1,744
Net income (loss)	10,394	11,032	2,580	(1,613)	22,393
Average loans	\$ 463.7	465.7	74.6	(58.8)	945.2
Average deposits	757.2	423.7	165.0	(70.0)	1,275.9
2017					
Revenue	\$ 47,018	30,000	17,072	(5,701)	88,389
Provision (reversal of provision) for credit losses	2,555	(19)	(5)	(3)	2,528
Net income (loss)	10,938	9,914	2,770	(1,439)	22,183
Average loans	\$ 475.7	465.6	71.9	(57.1)	956.1
Average deposits	729.6	464.2	189.0	(78.2)	1,304.6

(1) Includes the elimination of certain items that are included in more than one business segment, substantially all of which represents products and services for WIM customers served through Community Banking distribution channels.

Earnings Performance (continued)

Community Banking offers a complete line of diversified financial products and services for consumers and small businesses with annual sales generally up to \$5 million in which the owner generally is the financial decision maker. These financial products and services include checking and savings accounts, credit and debit cards, automobile, student, mortgage, home equity and small business lending, as well as referrals to Wholesale Banking and WIM business partners. The Community

Banking segment also includes the results of our Corporate Treasury activities net of allocations (including funds transfer pricing, capital, liquidity and certain corporate expenses) in support of other segments and results of investments in our affiliated venture capital and private equity partnerships. Table 9a provides additional financial information for Community Banking.

Table 9a: Community Banking

(in millions, except average balances which are in billions)	Year ended December 31,				
	2019	2018	% Change	2017	% Change
Net interest income	\$ 27,610	29,219	(6)%	\$ 28,658	2%
Noninterest income:					
Service charges on deposit accounts	2,823	2,641	7	2,909	(9)
Trust and investment fees:					
Brokerage advisory, commissions and other fees (1)	1,931	1,887	2	1,830	3
Trust and investment management (1)	805	910	(12)	889	2
Investment banking (2)	(93)	(35)	NM	(59)	41
Total trust and investment fees	2,643	2,762	(4)	2,660	4
Card fees	3,655	3,543	3	3,613	(2)
Other fees	1,278	1,359	(6)	1,497	(9)
Mortgage banking	2,307	2,659	(13)	3,895	(32)
Insurance	44	83	(47)	139	(40)
Net gains (losses) from trading activities	24	28	(14)	(251)	111
Net gains (losses) on debt securities	51	(3)	NM	709	NM
Net gains from equity securities (3)	2,155	1,505	43	1,455	3
Other income of the segment	2,726	3,117	(13)	1,734	80
Total noninterest income	17,706	17,694	—	18,360	(4)
Total revenue	45,316	46,913	(3)	47,018	—
Provision for credit losses	2,319	1,783	30	2,555	(30)
Noninterest expense:					
Personnel expense	22,867	21,252	8	20,381	4
Technology and equipment	2,423	2,356	3	2,157	9
Net occupancy	2,236	2,166	3	2,111	3
Core deposit and other intangibles	3	404	(99)	446	(9)
FDIC and other deposit assessments	327	624	(48)	715	(13)
Outside professional services	1,942	1,560	24	1,875	(17)
Operating losses	3,846	2,656	45	5,312	(50)
Other expense of the segment	(948)	(527)	(80)	(382)	(38)
Total noninterest expense	32,696	30,491	7	32,615	(7)
Income before income tax expense and noncontrolling interests	10,301	14,639	(30)	11,848	24
Income tax expense	2,426	3,784	(36)	634	497
Less: Net income from noncontrolling interests (4)	477	461	3	276	67
Net income	\$ 7,398	10,394	(29)	\$ 10,938	(5)
Average loans	\$ 459.4	463.7	(1)	\$ 475.7	(3)
Average deposits	782.0	757.2	3	729.6	4

NM - Not meaningful

(1) Represents income on products and services for WIM customers served through Community Banking distribution channels which is eliminated in consolidation.

(2) Includes underwriting fees paid to Wells Fargo Securities for services related to the issuance of our corporate securities which are offset in our Wholesale Banking segment and eliminated in consolidation.

(3) Largely represents gains resulting from venture capital investments.

(4) Reflects results attributable to noncontrolling interests predominantly associated with the Company's consolidated venture capital investments.

Community Banking reported net income of \$7.4 billion in 2019, down \$3.0 billion, or 29%, from 2018. Revenue was \$45.3 billion in 2019, down \$1.6 billion, or 3%, from 2018. The decrease in revenue in 2019 was due to lower net interest income, gains from the sales of purchased credit-impaired (PCI) residential mortgage loans, mortgage banking revenue driven by a decrease in servicing income, and trust and investment fees, partially offset by higher gains on equity securities, service charges on deposit accounts, and card fees.

The provision for credit losses in 2019 increased \$536 million from 2018 due to a higher level of credit quality improvement in 2018 compared with 2019, partially offset by lower net charge-offs in the automobile portfolio in 2019.

Noninterest expense of \$32.7 billion in 2019 increased \$2.2 billion, or 7%, from 2018. The increase in 2019 was predominantly driven by higher personnel expense, operating losses reflecting litigation accruals for a variety of matters, including previously disclosed retail sales practices matters, and outside professional services expense, partially offset by lower other expense, core deposit and other intangibles amortization expense, and FDIC and other deposit assessments expense.

Income tax expense was \$2.4 billion in 2019, down \$1.4 billion from \$3.8 billion in 2018. The decrease in income tax expense in 2019 was driven by lower pre-tax income, and reflected the non-tax-deductible treatment of certain litigation accruals.

Average loans decreased \$4.3 billion in 2019, or 1%, from 2018 driven by decreases in real estate 1-4 family junior lien mortgage, automobile, other revolving credit and installment, and commercial loans, partially offset by higher real estate 1-4 family first mortgage and credit card loans. Average deposits increased \$24.8 billion in 2019, or 3%, from 2018.

Earnings Performance (continued)

Wholesale Banking provides financial solutions to businesses with annual sales generally in excess of \$5 million and to financial institutions globally. Products and businesses include Commercial Banking, Commercial Real Estate, Corporate and

Investment Banking, Credit Investment Portfolio, Treasury Management, and Commercial Capital. Table 9b provides additional financial information for Wholesale Banking.

Table 9b: Wholesale Banking

(in millions, except average balances which are in billions)	Year ended December 31,				
	2019	2018	% Change	2017	% Change
Net interest income	\$ 17,699	18,690	(5)%	\$ 18,810	(1)%
Noninterest income:					
Service charges on deposit accounts	1,974	2,074	(5)	2,201	(6)
Trust and investment fees:					
Brokerage advisory, commissions and other fees	292	317	(8)	304	4
Trust and investment management	486	445	9	523	(15)
Investment banking	1,889	1,783	6	1,827	(2)
Total trust and investment fees	2,667	2,545	5	2,654	(4)
Card fees	359	362	(1)	345	5
Other fees	1,801	2,019	(11)	2,054	(2)
Mortgage banking	412	362	14	458	(21)
Insurance	303	312	(3)	872	(64)
Net gains from trading activities	915	516	77	701	(26)
Net gains (losses) on debt securities	89	102	(13)	(232)	144
Net gains from equity securities	416	293	42	116	153
Other income of the segment	1,042	1,431	(27)	2,021	(29)
Total noninterest income	9,978	10,016	—	11,190	(10)
Total revenue	27,677	28,706	(4)	30,000	(4)
Provision (reversal of provision) for credit losses	378	(58)	752	(19)	NM
Noninterest expense:					
Personnel expense	5,560	5,567	—	6,603	(16)
Technology and equipment	38	48	(21)	55	(13)
Net occupancy	388	403	(4)	425	(5)
Core deposit and other intangibles	92	378	(76)	414	(9)
FDIC and other deposit assessments	172	419	(59)	481	(13)
Outside professional services	600	958	(37)	1,134	(16)
Operating losses	35	246	(86)	74	232
Other expense of the segment	8,467	8,138	4	7,438	9
Total noninterest expense	15,352	16,157	(5)	16,624	(3)
Income before income tax expense and noncontrolling interest	11,947	12,607	(5)	13,395	(6)
Income tax expense (1)	1,246	1,555	(20)	3,496	(56)
Less: Net income (loss) from noncontrolling interest	5	20	(75)	(15)	233
Net income	\$ 10,696	11,032	(3)	\$ 9,914	11
Average loans	\$ 475.3	465.7	2	\$ 465.6	—
Average deposits	422.5	423.7	—	464.2	(9)

NM - Not meaningful

(1) Income tax expense for our Wholesale Banking operating segment included income tax credits related to low-income housing and renewable energy investments of \$1.8 billion, \$1.6 billion and \$1.4 billion for the years ended December 31, 2019, 2018 and 2017, respectively.

Wholesale Banking reported net income of \$10.7 billion in 2019, down \$336 million, or 3%, from 2018. The decrease in 2019 was predominantly due to lower net interest income, partially offset by lower noninterest expense. Revenue of \$27.7 billion in 2019 decreased \$1.0 billion, or 4%, from 2018.

Net interest income of \$17.7 billion in 2019 decreased \$1.0 billion, or 5%, from 2018. The decrease in net interest income in 2019 was due to lower credit spreads on loans, trading assets, and debt securities, as well as the impact of migration from noninterest-bearing to interest-bearing deposits.

Noninterest income of \$10.0 billion in 2019 was flat compared with 2018.

The provision for credit losses in 2019 increased \$436 million from 2018, driven by lower recoveries reflecting a higher level of credit quality improvement in 2018 compared with 2019.

Noninterest expense of \$15.4 billion in 2019 decreased \$805 million, or 5%, compared with 2018. The decrease in 2019 was predominantly due to lower core deposit and other intangibles amortization expense, FDIC and other deposit assessments expense, operating losses, and lease expense (within other expense), as well as the impact of the sale of Eastdil, partially offset by increased project expense (within other expense).

Average loans of \$475.3 billion in 2019 increased \$9.6 billion, or 2%, compared with 2018. Loan growth in 2019 from commercial and industrial loans was partially offset by declines in commercial real estate loans. Average deposits of \$422.5 billion in 2019 decreased \$1.2 billion from 2018. The decline in 2019 was driven by commercial customers allocating more cash to alternative higher-rate liquid investments.

Wealth and Investment Management provides a full range of personalized wealth management, investment and retirement products and services to clients across U.S.-based businesses including Wells Fargo Advisors, The Private Bank, Abbot

Downing, and Wells Fargo Asset Management. We deliver financial planning, private banking, credit, investment management and fiduciary services to high-net worth and ultra-high-net worth individuals and families. We also serve clients' brokerage needs and provide investment management capabilities delivered to global institutional clients through separate accounts and the Wells Fargo Funds. The sale of our IRT business closed on July 1, 2019. For additional information on the sale of our IRT business, including its impact on our AUM, AUA and associated revenue and expenses, see the "Noninterest Income" section in this Report. Tables 9c through 9f provide additional financial information for WIM.

Table 9c: Wealth and Investment Management

(in millions, except average balances which are in billions)	Year ended December 31,				
	2019	2018	% Change	2017	% Change
Net interest income	\$ 4,037	4,441	(9)%	\$ 4,641	(4)%
Noninterest income:					
Service charges on deposit accounts	16	16	—	17	(6)
Trust and investment fees:					
Brokerage advisory, commissions and other fees	8,946	9,161	(2)	9,072	1
Trust and investment management	2,587	2,893	(11)	2,877	1
Investment banking	6	9	(33)	(2)	550
Total trust and investment fees	11,539	12,063	(4)	11,947	1
Card fees	6	6	—	6	—
Other fees	17	17	—	18	(6)
Mortgage banking	(12)	(11)	(9)	(10)	(10)
Insurance	72	82	(12)	88	(7)
Net gains from trading activities	53	57	(7)	92	(38)
Net gains on debt securities	—	9	(100)	2	350
Net gains (losses) from equity securities	272	(283)	196	208	NM
Other income of the segment	1,341	(21)	NM	63	NM
Total noninterest income	13,304	11,935	11	12,431	(4)
Total revenue	17,341	16,376	6	17,072	(4)
Provision (reversal of provision) for credit losses	5	(5)	200	(5)	—
Noninterest expense:					
Personnel expense	8,477	8,085	5	8,126	(1)
Technology and equipment	304	42	624	28	50
Net occupancy	448	440	2	431	2
Core deposit and other intangibles	13	276	(95)	292	(5)
FDIC and other deposit assessments	49	116	(58)	154	(25)
Outside professional services	684	815	(16)	834	(2)
Operating losses	452	232	95	115	102
Other expense of the segment	3,282	2,932	12	2,643	11
Total noninterest expense	13,709	12,938	6	12,623	2
Income before income tax expense and noncontrolling interest	3,627	3,443	5	4,454	(23)
Income tax expense	904	861	5	1,668	(48)
Less: Net income from noncontrolling interest	10	2	400	16	(88)
Net income	\$ 2,713	2,580	5	\$ 2,770	(7)
Average loans	\$ 75.6	74.6	1	\$ 71.9	4
Average deposits	146.0	165.0	(12)	189.0	(13)

NM - Not meaningful

WIM reported net income of \$2.7 billion in 2019, up \$133 million, or 5%, from 2018. Revenue of \$17.3 billion in 2019 increased \$965 million, or 6%, from 2018.

Net interest income of \$4.0 billion in 2019 decreased \$404 million, or 9%, from 2018 predominantly due to the impact of lower deposit balances.

Noninterest income of \$13.3 billion in 2019 increased \$1.4 billion, or 11%, from 2018, predominantly due to the \$1.1 billion gain on the sale of our IRT business and higher net gains from equity securities on increased deferred compensation plan investment results (largely offset by higher employee benefits expense), partially offset by lower asset-based fees.

Earnings Performance (continued)

Noninterest income in 2018 reflected an impairment on the sale of our ownership stake in RockCreek.

The provision for credit losses was \$5 million in 2019, compared with a reversal of provision of \$5 million in 2018.

Noninterest expense of \$13.7 billion in 2019 increased \$771 million, or 6%, from 2018 due to higher personnel expense on increased deferred compensation plan expense (offset in net gains from equity securities), technology and equipment expense including \$265 million of capitalized software impairment and computer software licensing and maintenance costs, reflecting the strategic reassessment of technology projects, operating losses, and project expense (within other expense), partially offset by lower core deposits and other intangibles amortization expense.

Average loans of \$75.6 billion in 2019 increased \$1.0 billion from 2018 driven by growth in nonconforming mortgage loans. Average deposits of \$146.0 billion in 2019 decreased \$19.0 billion, or 12%, from 2018 as customers allocated more cash into higher yielding liquid alternatives.

The following discussions provide additional information for client assets we oversee in our retail brokerage advisory and trust and investment management business lines.

Retail Brokerage Client Assets Brokerage advisory, commissions and other fees are received for providing full-service and discount brokerage services predominantly to retail brokerage clients. Offering advisory account relationships to our brokerage clients is an important component of our broader strategy of meeting their financial needs. Although a majority of our retail brokerage client assets are in accounts that earn brokerage commissions, the fees from those accounts generally represent transactional commissions based on the number and size of transactions executed at the client's direction. Fees from advisory accounts are based on a percentage of the market value of the assets as of the beginning of the quarter, which vary across the account types based on the distinct services provided, and are affected by investment performance as well as asset inflows and outflows. A majority of our brokerage advisory, commissions and other fee income is earned from advisory accounts. Table 9d shows advisory account client assets as a percentage of total retail brokerage client assets at December 31, 2019, 2018 and 2017.

Table 9d: Retail Brokerage Client Assets

(in billions)	Year ended December 31,		
	2019	2018	2017
Retail brokerage client assets	\$ 1,646.0	1,487.6	1,651.3
Advisory account client assets	589.5	501.1	542.8
Advisory account client assets as a percentage of total client assets	36%	34	33

Retail Brokerage advisory accounts include assets that are financial advisor-directed and separately managed by third-party managers, as well as certain client-directed brokerage assets where we earn a fee for advisory and other services, but do not have investment discretion. For the years ended December 31, 2019, 2018 and 2017, the average fee rate by account type

ranged from 80 to 120 basis points. Table 9e presents retail brokerage advisory account client assets activity by account type for the years ended December 31, 2019, 2018 and 2017. The activity in 2019 reflected higher market valuations and net outflows primarily from the correspondent clearing business.

Table 9e: Retail Brokerage Advisory Account Client Assets

(in billions)	Balance, beginning of period	Inflows (1)	Outflows (2)	Market impact (3)	Year ended
					Balance, end of period
December 31, 2019					
Client directed (4)	\$ 151.5	33.5	(41.8)	26.2	169.4
Financial advisor directed (5)	141.9	33.9	(34.7)	35.2	176.3
Separate accounts (6)	136.4	24.2	(29.7)	29.2	160.1
Mutual fund advisory (7)	71.3	11.8	(14.1)	14.7	83.7
Total advisory client assets	\$ 501.1	103.4	(120.3)	105.3	589.5
December 31, 2018					
Client directed (4)	\$ 170.9	33.6	(41.0)	(12.0)	151.5
Financial advisor directed (5)	147.0	30.0	(32.9)	(2.2)	141.9
Separate accounts (6)	149.1	23.8	(29.1)	(7.4)	136.4
Mutual fund advisory (7)	75.8	12.8	(13.8)	(3.5)	71.3
Total advisory client assets	\$ 542.8	100.2	(116.8)	(25.1)	501.1
December 31, 2017					
Client directed (4)	\$ 159.1	37.1	(39.2)	13.9	170.9
Financial advisor directed (5)	115.7	30.6	(24.5)	25.2	147.0
Separate accounts (6)	125.7	26.1	(23.5)	20.8	149.1
Mutual fund advisory (7)	63.3	13.1	(11.1)	10.5	75.8
Total advisory client assets	\$ 463.8	106.9	(98.3)	70.4	542.8

(1) Inflows include new advisory account assets, contributions, dividends and interest.

(2) Outflows include closed advisory account assets, withdrawals and client management fees.

(3) Market impact reflects gains and losses on portfolio investments.

(4) Investment advice and other services are provided to client, but decisions are made by the client and the fees earned are based on a percentage of the advisory account assets, not the number and size of transactions executed by the client.

(5) Professionally managed portfolios with fees earned based on respective strategies and as a percentage of certain client assets.

(6) Professional advisory portfolios managed by Wells Fargo Asset Management or third-party asset managers. Fees are earned based on a percentage of certain client assets.

(7) Program with portfolios constructed of load-waived, no-load and institutional share class mutual funds. Fees are earned based on a percentage of certain client assets.

Earnings Performance (continued)

Trust and Investment Client Assets Under Management We earn trust and investment management fees from managing and administering assets, including mutual funds, separate accounts, and personal trust assets, through our asset management and wealth businesses. Prior to the sale of our IRT business, which closed on July 1, 2019, we also earned fees from managing employee benefit trusts through the retirement business. Our asset management business is conducted by Wells Fargo Asset Management (WFAM), which offers Wells Fargo proprietary mutual funds and manages institutional separate accounts, and

our wealth business manages assets for high net worth clients. Substantially all of our trust and investment management fee income is earned from AUM where we have discretionary management authority over the investments and generate fees as a percentage of the market value of the AUM. For additional information on the sale of our IRT business, including its impact on our AUM, AUA and associated revenue and expenses, see the “Noninterest Income” section in this Report. Table 9f presents AUM activity for the years ended December 31, 2019, 2018 and 2017.

Table 9f: WIM Trust and Investment – Assets Under Management

(in billions)					Year ended
	Balance, beginning of period	Inflows (1)	Outflows (2)	Market impact (3)	Balance, end of period
December 31, 2019					
Assets managed by WFAM (4):					
Money market funds (5)	\$ 112.4	18.2	—	—	130.6
Other assets managed	353.5	75.1	(86.1)	35.7	378.2
Assets managed by Wealth and IRT (6)	170.7	33.6	(40.5)	23.6	187.4
Total assets under management	\$ 636.6	126.9	(126.6)	59.3	696.2
December 31, 2018					
Assets managed by WFAM (4):					
Money market funds (5)	\$ 108.2	4.2	—	—	112.4
Other assets managed	395.7	85.5	(120.2)	(7.5)	353.5
Assets managed by Wealth and IRT (6)	186.2	36.3	(39.5)	(12.3)	170.7
Total assets under management	\$ 690.1	126.0	(159.7)	(19.8)	636.6
December 31, 2017					
Assets managed by WFAM (4):					
Money market funds (5)	\$ 102.6	5.6	—	—	108.2
Other assets managed	379.6	116.0	(130.9)	31.0	395.7
Assets managed by Wealth and IRT (6)	168.5	41.1	(39.4)	16.0	186.2
Total assets under management	\$ 650.7	162.7	(170.3)	47.0	690.1

(1) Inflows include new managed account assets, contributions, dividends and interest.

(2) Outflows include closed managed account assets, withdrawals and client management fees.

(3) Market impact reflects gains and losses on portfolio investments.

(4) Assets managed by WFAM consist of equity, alternative, balanced, fixed income, money market, and stable value, and include client assets that are managed or sub-advised on behalf of other Wells Fargo lines of business.

(5) Money Market funds activity is presented on a net inflow or net outflow basis, because the gross flows are not meaningful nor used by management as an indicator of performance.

(6) Includes \$5.0 billion, \$4.9 billion and \$5.5 billion as of December 31, 2019, 2018 and 2017, respectively, of client assets invested in proprietary funds managed by WFAM.

Balance Sheet Analysis

At December 31, 2019, our assets totaled \$1.9 trillion, up \$31.7 billion from December 31, 2018. Asset growth was predominantly due to increases in federal funds sold and securities purchased under resale agreements, debt securities, and equity securities, which increased \$21.9 billion, \$12.4 billion, and \$13.1 billion, respectively, partially offset by a \$30.2 billion decline in interest-earning deposits with banks.

The following discussion provides additional information about the major components of our balance sheet. Information regarding our capital and changes in our asset mix is included in the “Earnings Performance – Net Interest Income” and “Capital Management” sections and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

Available-for-Sale and Held-to-Maturity Debt Securities

Table 10: Available-for-Sale and Held-to-Maturity Debt Securities

(in millions)	December 31, 2019			December 31, 2018		
	Amortized cost	Net unrealized gain (loss)	Fair value	Amortized cost	Net unrealized gain (loss)	Fair value
Available-for-sale	\$ 260,060	3,399	263,459	272,471	(2,559)	269,912
Held-to-maturity	153,933	2,927	156,860	144,788	(2,673)	142,115
Total (1)	413,993	6,326	420,319	417,259	(5,232)	412,027

(1) Available-for-sale debt securities are carried on the balance sheet at fair value. Held-to-maturity debt securities are carried on the balance sheet at amortized cost.

Table 10 presents a summary of our available-for-sale and held-to-maturity debt securities, which increased \$2.7 billion in balance sheet carrying value from December 31, 2018, due to higher net unrealized gains, partially offset by paydowns, sales and maturities exceeding purchases.

The total net unrealized gains on available-for-sale debt securities were \$3.4 billion at December 31, 2019, up from net unrealized losses of \$2.6 billion at December 31, 2018, driven by lower interest rates and tighter credit spreads.

The size and composition of our available-for-sale and held-to-maturity debt securities is dependent upon the Company's liquidity and interest rate risk management objectives. Our business generates assets and liabilities, such as loans, deposits and long-term debt, which have different maturities, yields, repricing, prepayment characteristics and other provisions that expose us to interest rate and liquidity risk.

The available-for-sale debt securities portfolio primarily consists of liquid, high-quality U.S. Treasury and federal agency debt, and agency mortgage-backed securities (MBS), in addition to securities issued by U.S. states and political subdivisions, corporate debt securities, and highly rated collateralized loan obligations (CLOs). The available-for-sale debt securities portfolio can be used to meet funding needs that arise in the normal course of business or due to market stress. Changes in our interest rate risk profile may occur due to changes in overall economic or market conditions, which could influence loan origination demand, prepayment speeds, or deposit balances and mix. In response, the available-for-sale debt securities portfolio can be rebalanced to meet the Company's interest rate risk management objectives. In addition to meeting liquidity and interest rate risk management objectives, the available-for-sale debt securities portfolio may provide yield enhancement over other short-term assets. See the “Risk Management – Asset/Liability Management” section in this Report for more information on liquidity and interest rate risk.

The held-to-maturity debt securities portfolio predominantly consists of high-quality U.S. Treasury debt, agency MBS and securities issued by U.S. states and political subdivisions where our intent is to hold these securities to maturity and collect the contractual cash flows. The held-to-maturity debt securities portfolio may also provide yield enhancement over short-term assets.

We analyze debt securities for OTTI quarterly or more often if a potential loss-triggering event occurs. In 2019, we recognized \$63 million of OTTI write-downs on debt securities. For a discussion of our OTTI accounting policies and underlying considerations and analysis, see Note 1 (Summary of Significant Accounting Policies) and Note 5 (Available-for-Sale and Held-to-Maturity Debt Securities) to Financial Statements in this Report.

At December 31, 2019, debt securities included \$53.8 billion of municipal bonds, of which 96.9% were rated “A-” or better based predominantly on external ratings. Additionally, some of the debt securities in our total municipal bond portfolio are guaranteed against loss by bond insurers. These guaranteed bonds are predominantly investment grade and were generally underwritten in accordance with our own investment standards prior to the determination to purchase, without relying on the bond insurer's guarantee in making the investment decision. The credit quality of our municipal bond holdings are monitored as part of our ongoing impairment analysis.

The weighted-average expected maturity of debt securities available-for-sale was 4.7 years at December 31, 2019. The expected remaining maturity is shorter than the remaining contractual maturity for the 63.5% of this portfolio that is MBS because borrowers generally have the right to prepay obligations before the underlying mortgages mature. The estimated effects of a 200 basis point increase or decrease in interest rates on the fair value and the expected remaining maturity of the MBS available-for-sale portfolio are shown in Table 11.

Balance Sheet Analysis (continued)

Table 11: Mortgage-Backed Securities Available for Sale

(in billions)	Fair value	Net unrealized gain (loss)	Expected remaining maturity (in years)
At December 31, 2019			
Actual	167.2	2.2	4.6
Assuming a 200 basis point:			
Increase in interest rates	151.3	(13.7)	6.9
Decrease in interest rates	176.9	11.9	3.2

The weighted-average expected remaining maturity of debt securities held-to-maturity (HTM) was 4.9 years at December 31, 2019. HTM debt securities are measured at amortized cost and, therefore, changes in the fair value of our held-to-maturity MBS resulting from changes in interest rates are not recognized in earnings. See Note 5 (Available-for-Sale and Held-to-Maturity Debt Securities) to Financial Statements in this Report for a summary of debt securities by security type.

Table 12: Loan Portfolios

(in millions)	December 31, 2019	December 31, 2018
Commercial	\$ 515,719	513,405
Consumer	446,546	439,705
Total loans	962,265	953,110
Change from prior year	\$ 9,155	(3,660)

Average loan balances and a comparative detail of average loan balances is included in Table 5 under “Earnings Performance – Net Interest Income” earlier in this Report. Additional information on total loans outstanding by portfolio segment and class of financing receivable is included in the “Risk Management – Credit Risk Management” section in this Report. Period-end

Loan Portfolios

Table 12 provides a summary of total outstanding loans by portfolio segment. Total loans increased \$9.2 billion from December 31, 2018, largely driven by an increase in consumer loans.

Consumer loans were up \$6.8 billion from December 31, 2018, predominantly due to growth in the real estate 1-4 family first mortgage portfolio, as mortgage loan originations were partially offset by paydowns and \$4.0 billion of sales of PCI loans, predominantly Pick-a-Pay, in 2019. We also purchased \$3.3 billion of mortgage loans in 2019 as a result of exercising servicer cleanup calls. In addition, during 2019, we reclassified \$1.9 billion of existing mortgage loans to MLHFS in anticipation of future whole loan sales.

Commercial loans also increased from December 31, 2018, predominantly driven by growth in our commercial and industrial loan portfolio, reflecting growth in our Corporate and Investment Banking business and purchases of CLOs in loan form within our Credit Investment Portfolio, partially offset by declines in our Commercial Banking business.

balances and other loan related information are in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 13 shows contractual maturities for selected classes of commercial loans and the distribution of loans to changes in interest rates.

Table 13: Maturities for Selected Commercial Loan Categories

(in millions)	December 31, 2019			
	Within one year	After one year through five years	After five years	Total
Selected loan maturities:				
Commercial and industrial	\$ 130,342	196,460	27,323	354,125
Real estate mortgage	27,951	64,506	29,367	121,824
Real estate construction	9,219	10,178	542	19,939
Total selected loans	\$ 167,512	271,144	57,232	495,888
Distribution of loans to changes in interest rates:				
Loans at fixed interest rates	\$ 22,660	28,688	18,479	69,827
Loans at floating/variable interest rates	144,852	242,456	38,753	426,061
Total selected loans	\$ 167,512	271,144	57,232	495,888

Deposits

Deposits were \$1.3 trillion at December 31, 2019, up \$36.5 billion from December 31, 2018, due to an increase in commercial deposits, consumer and small business banking deposits, and mortgage escrow deposits reflecting an inflow of higher mortgage payoffs to be remitted to investors in accordance with servicing contracts, partially offset by a decrease in other time deposits. The increase in commercial deposits was due to higher balances in corporate and investment banking deposits, and commercial real estate deposits. The

increase in consumer and small business banking deposits was due to higher balances in high-yield savings, certificates of deposit (CDs), and noninterest-bearing deposits, partially offset by declines in brokerage sweeps. Table 14 provides additional information regarding deposits. Information regarding the impact of deposits on net interest income and a comparison of average deposit balances is provided in the “Earnings Performance – Net Interest Income” section and Table 5 earlier in this Report.

Table 14: Deposits

(\$ in millions)	Dec 31, 2019	% of total deposits	Dec 31, 2018	% of total deposits	% Change
Noninterest-bearing	\$ 344,496	26%	\$ 349,534	27%	(1)
Interest-bearing checking	62,814	5	56,797	4	11
Market rate and other savings	751,080	57	703,338	55	7
Savings certificates	31,715	2	22,648	2	40
Other time deposits	78,609	6	95,602	7	(18)
Deposits in non-U.S. offices (1)	53,912	4	58,251	5	(7)
Total deposits	\$ 1,322,626	100%	\$ 1,286,170	100%	3

(1) Includes Eurodollar sweep balances of \$34.2 billion and \$31.8 billion at December 31, 2019 and 2018, respectively.

Equity

Total equity was \$188.0 billion at December 31, 2019, compared with \$197.1 billion at December 31, 2018. The decrease was driven by a \$21.6 billion increase in treasury stock and a \$1.7 billion decline in preferred stock, partially offset by an \$8.5 billion increase in retained earnings net of dividends paid, and a \$5.0 billion increase in cumulative other comprehensive income predominantly due to fair value adjustments to available-for-sale debt securities. The increase in treasury stock was the result of the repurchase of 502.4 million shares of common stock in 2019, an increase of 34% from 2018.

Off-Balance Sheet Arrangements

In the ordinary course of business, we engage in financial transactions that are not recorded on the balance sheet, or may be recorded on the balance sheet in amounts that are different from the full contract or notional amount of the transaction. Our off-balance sheet arrangements include commitments to lend and purchase debt and equity securities, transactions with unconsolidated entities, guarantees, derivatives, and other commitments. These transactions are designed to (1) meet the financial needs of customers, (2) manage our credit, market or liquidity risks, and/or (3) diversify our funding sources.

Commitments to Lend

We enter into commitments to lend to customers, which are usually at a stated interest rate, if funded, and for specific purposes and time periods. When we enter into commitments, we are exposed to credit risk. The maximum credit risk for these commitments will generally be lower than the contractual amount because a significant portion of these commitments are not funded. For more information, see Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Commitments to Purchase Debt and Equity Securities

We enter into commitments to purchase securities under resale agreements. We also may enter into commitments to purchase debt and equity securities to provide capital for customers' funding, liquidity or other future needs. For more information, see Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments) to Financial Statements in this Report.

Transactions with Unconsolidated Entities

In the normal course of business, we enter into various types of on- and off-balance sheet transactions with special purpose entities (SPEs), which are corporations, trusts, limited liability companies or partnerships that are established for a limited purpose. Generally, SPEs are formed in connection with securitization transactions and are considered variable interest entities (VIEs). For more information, see Note 10 (Securitizations and Variable Interest Entities) to Financial Statements in this Report.

Guarantees and Other Arrangements

Guarantees are contracts that contingently require us to make payments to a guaranteed party based on an event or a change in an underlying asset, liability, rate or index. Guarantees are generally in the form of standby letters of credit, direct pay letters of credit, written options, recourse obligations, exchange and clearing house guarantees, indemnifications, and other types of similar arrangements. For more information, see Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments) to Financial Statements in this Report.

Derivatives

We use derivatives to manage exposure to market risk, including interest rate risk, credit risk and foreign currency risk, and to assist customers with their risk management objectives. Derivatives are recorded on the balance sheet at fair value, and volume can be measured in terms of the notional amount, which is generally not exchanged, but is used only as the basis on which interest and other payments are determined. The notional amount is not recorded on the balance sheet and is not, when viewed in isolation, a meaningful measure of the risk profile of the instruments. For more information, see Note 18 (Derivatives) to Financial Statements in this Report.

Contractual Cash Obligations

In the ordinary course of business, we enter into other contractual obligations that may require future cash payments, including debt issuances for the funding of operations and leases for premises and equipment.

Table 15 summarizes these contractual obligations as of

December 31, 2019, excluding accrued expenses and other liabilities, short-term borrowings and obligations for pension and postretirement benefit plans. For more information, see Note 14 (Short-Term Borrowings) and Note 23 (Employee Benefits and Other Expenses) to Financial Statements in this Report.

Table 15: Contractual Cash Obligations

		December 31, 2019					
(in millions)	Note(s) to Financial Statements	Less than 1 year	1-3 years	3-5 years	More than 5 years	Indeterminate maturity	Total
Contractual payments by period:							
Deposits (1)	13	\$ 88,259	21,484	6,036	3,070	1,203,777	1,322,626
Long-term debt (2)	15	39,646	73,329	29,776	85,440	—	228,191
Interest (3)		6,805	8,748	5,733	19,648	—	40,934
Operating leases	7	1,006	1,942	1,347	1,672	—	5,967
Unrecognized tax obligations	24	5	—	—	—	3,676	3,681
Commitments to purchase debt and equity securities (4)	16	2,706	—	—	18	—	2,724
Purchase and other obligations (5)		855	1,009	438	314	—	2,616
Total contractual obligations		\$ 139,282	106,512	43,330	110,162	1,207,453	1,606,739

(1) Includes interest-bearing and noninterest-bearing checking, and market rate and other savings accounts.

(2) Balances are presented net of unamortized debt discounts and premiums and purchase accounting adjustments.

(3) Represents the future interest obligations related to interest-bearing time deposits and long-term debt in the normal course of business including a net reduction of \$7.1 billion related to hedges used to manage interest rate risk. These interest obligations assume no early debt redemption. We estimated variable interest rate payments using December 31, 2019, rates, which we held constant until maturity. We have excluded interest related to structured notes where our payment obligation is contingent on the performance of certain benchmarks.

(4) Includes unfunded commitments to purchase debt securities of \$18 million and equity securities of \$2.7 billion, respectively. Substantially all of our equity commitments are included in the 'Less than one year' category as there are no specified contribution dates in the agreements. These obligations may be requested at any time by the investment manager.

(5) Represents agreements related to unrecognized obligations to purchase goods or services.

We are subject to the income tax laws of the U.S., its states and municipalities, and those of the non-U.S. jurisdictions in which we operate. We have various unrecognized tax obligations related to these operations that may require future cash tax payments to various taxing authorities. Because of their uncertain nature, the expected timing and amounts of these payments generally are not reasonably estimable or determinable. We attempt to estimate the amount payable in the next 12 months based on the status of our tax examinations and settlement discussions. See Note 24 (Income Taxes) to Financial Statements in this Report for more information.

Risk Management

Wells Fargo manages a variety of risks that can significantly affect our financial performance and our ability to meet the expectations of our customers, shareholders, regulators and other stakeholders.

Risk is Part of our Business Model The Company measures and manages risk as part of our business, including in connection with the products and services we offer to our customers. The risks we take include financial, such as credit, interest rate, market, liquidity and funding risks, and non-financial, such as operational including compliance and model risks, strategic and reputation risks.

Risk Profile Our risk profile is a holistic view of all risks we hold at a point in time, including emerging risks. The Company monitors its risk profile, and the Board periodically reviews reports and analysis concerning our risk profile.

Risk Capacity Risk capacity refers to the maximum level of risk that the Company could assume given its current level of resources before triggering regulatory and other constraints on its capital and liquidity needs.

Risk Appetite Management defines and the Board approves the Company's risk appetite, which is the amount of risk the Company is comfortable taking given its current level of resources. Risk appetite defines which risks are acceptable and at what level and guides business and risk leaders. Risk appetite boundaries are set within the Company's risk capacity. The Company's risk appetite is articulated in a statement of risk appetite, which is approved at least annually by the Board. The Company continuously monitors its risk appetite, and the Board reviews periodic risk appetite reports and analysis.

Risk and Strategy The Company's risk profile, risk capacity, risk appetite, and risk management effectiveness (e.g., the holistic measure of the quality and effectiveness of the Company's risk management activities, including the functional or programmatic use of controls and capabilities to manage risks) are considered in the strategic planning process, which is closely linked with the Company's capital planning process. The Company's Independent Risk Management (IRM) organization participates in strategic planning at several points in the process, providing challenge to and independent assessment of the Company's self-assessment of the risks associated with strategic planning initiatives. IRM also independently assesses the impact of the strategic plan on risk capacity, risk appetite, and risk management effectiveness at the business group, enterprise function, and aggregate Company level. Risk decisions related to the strategic plan are approved by the Enterprise Risk & Control Committee (ERCC), a management governance committee that governs the management of all risk types. After a critical review, the strategic plan is presented to the Board each year for review and approval.

Everyone Manages Risk Every team member creates risk in the course of performing business activities and is required to manage that risk. Risk is everyone's responsibility. Every team member is required to comply with applicable laws, regulations, and Company policies.

Risk and Culture The Board holds management accountable for establishing and maintaining the right risk culture and effectively managing risk. Team members are strongly encouraged and expected to speak up when they see something that could cause harm to the Company's customers, communities, team members, shareholders, or reputation. Because risk management is everyone's responsibility, all team members are expected to challenge risk decisions when appropriate and to escalate their concerns when they have not been addressed. Team member performance evaluations are tied to, and take into account, effective risk management. The Company's performance management and incentive compensation programs are designed to establish a balanced framework for risk and reward under core principles that team members are expected to know and practice. The Board, through its Human Resources Committee, plays an important role in overseeing and providing credible challenge to the Company's performance management and incentive compensation programs.

Risk Management Framework The Company's risk management framework sets forth the core principles on how the Company seeks to manage and govern its risk. Many Company policies and documents anchor to the risk management framework's core principles. The Board's Risk Committee annually reviews and approves the risk management framework.

Risk Governance

Role of the Board The Board oversees the Company's business, including its risk management. The Board assesses management's performance, provides credible challenge, and holds management accountable for maintaining an effective risk management program and for adhering to risk management expectations.

Board Committee Structure The Board carries out its risk oversight responsibilities directly and through its committees.

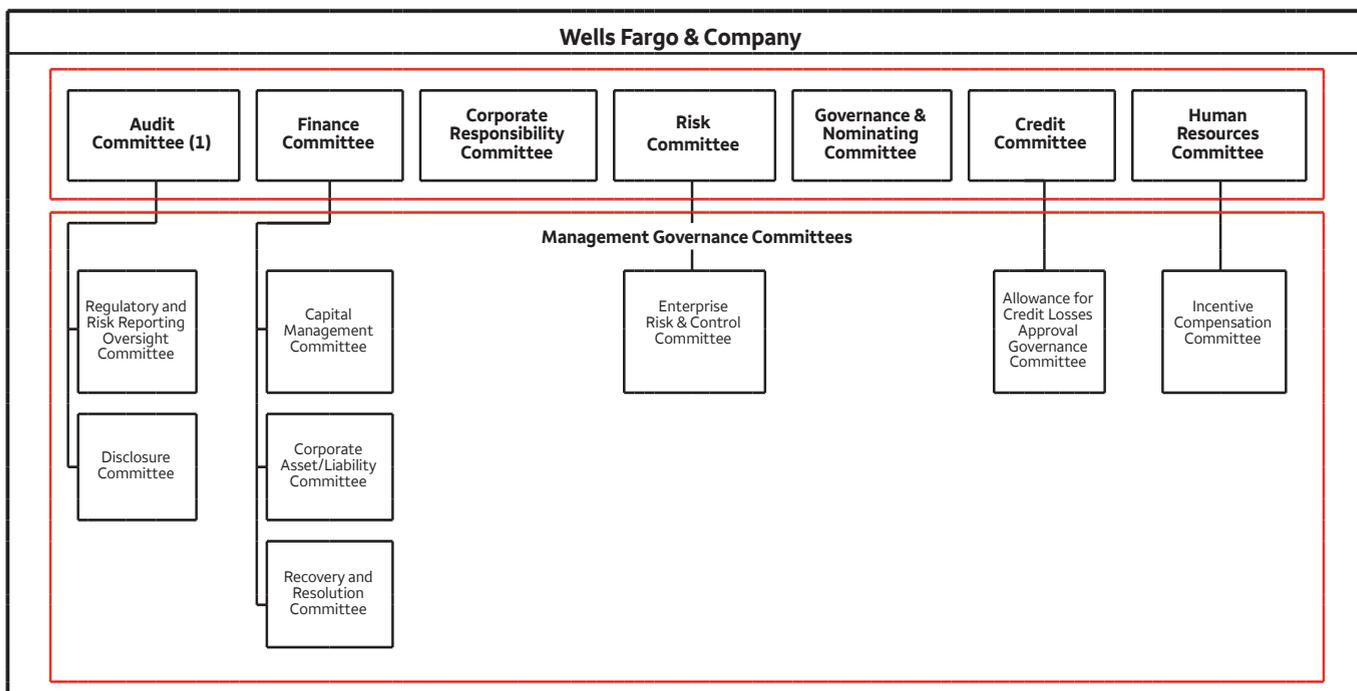
The Risk Committee approves the Company's risk management framework and oversees its implementation, including the processes established by management to identify, assess, measure, monitor, and manage risks. It also monitors the Company's adherence to its risk appetite. In addition, the Risk Committee oversees IRM and the performance of the Chief Risk Officer (CRO) who reports functionally to the Risk Committee and administratively to the CEO.

Management Committee Structure The Company has established management committees, including those focused on risk, that support management in carrying out its governance and risk management responsibilities. One type of management committee is a governance committee, which is a decision making body that operates for a particular purpose.

Each management governance committee is expected to discuss, document, and make decisions regarding significant risk issues, emerging risks, and risk acceptances; review and monitor progress related to critical and high-risk issues and remediation efforts within its scope, including lessons learned; and report key challenges, decisions, escalations, other actions, and open issues as appropriate.

Table 16 below presents the structure of the Company's Board committees and management governance committees, including relevant reporting and escalation paths.

Table 16: Board and Management-level Governance Committee Structure



(1) The Audit Committee additionally oversees the internal audit function; external auditor independence, activities, and performance; and the disclosure framework for financial, regulatory and risk reports prepared for the Board, management, and bank regulatory agencies; and assists the Board in its oversight of the Company's compliance with legal and regulatory requirements.

Management Governance Committees Reporting to the Risk Committee of the Board The ERCC governs the management of all risk types, including financial risks and non-financial risks. The ERCC receives information about risk and control events, addresses escalated risks and issues, actively oversees risk control, and provides regular updates to the Risk Committee regarding current and emerging risks and management's assessment of the effectiveness of the Company's risk management program.

The ERCC is chaired by the CEO, with membership made up of the CEO and the heads of business groups and certain enterprise functions. The Chief Auditor attends all meetings of the ERCC. The ERCC has a direct escalation path to the Risk Committee. The ERCC also escalates credit risks and issues to the Credit Committee and certain human capital risks and issues to the Human Resources Committee. In addition, the CRO has the authority to escalate anything directly to the Board. Risks and issues are escalated to the ERCC in accordance with applicable policies and procedures governing escalations.

Each business group and enterprise function has a risk and control committee, which are management governance committees with mandates that align with the ERCC but with their scope limited to the relevant business groups or enterprise functions. The focus of these committees is on the risks that each business group or enterprise function generates and is responsible for managing, and the controls each business group or enterprise function is expected to have in place.

In addition to each risk and control committee, management governance committees dedicated to specific risk types and risk topics also report to the ERCC to help provide more comprehensive governance of risks.

Risk Operating Model - Roles and Responsibilities

The Company has three lines of defense: the front line, Independent Risk Management, and Internal Audit. Our risk operating model creates necessary interaction, interdependencies, and ongoing engagement among the lines of defense:

- **Front Line** The front line, which is composed of business groups and certain activities of enterprise functions, is the first line of defense. In the course of its business activities, the front line identifies, measures and assesses, manages, controls, monitors, and reports on risk associated with its business activities and balances risk and reward in decision making while remaining within the Company's risk appetite.
- **Independent Risk Management** IRM is the second line of defense. It establishes and maintains the Company's risk management program and provides oversight, including challenge to and independent assessment of the front line's execution of its risk management responsibilities.
- **Internal Audit** Internal Audit is the third line of defense. It is responsible for acting as an independent assurance function and validates that the risk management program is adequately designed and functioning effectively.

Risk Type Classifications

The Company uses common classifications, hierarchies, and ratings to enable consistency across risk management programs and aggregation of information. Risk type classifications permit the Company to identify and prioritize its risk exposures, including emerging risk exposures.

Risk Management (continued)

Operational Risk Management

Operational risk, which in addition to those discussed in this section, includes compliance risk and model risk, is the risk resulting from inadequate or failed internal processes, people and systems, or from external events.

The Board's Risk Committee has primary oversight responsibility for all aspects of operational risk, including significant supporting programs and/or policies regarding the Company's business resiliency and disaster recovery, data management, information security, technology, and third-party risk management. As part of its oversight responsibilities, the Board's Risk Committee approves the operational risk statement of risk appetite including inner and outer boundary thresholds, reviews and approves significant operational risk policies, and oversees the Company's operational risk management program.

At the management level, the Operational Risk Group organization, which is part of IRM, has primary oversight responsibility for operational risk. The Operational Risk Group reports to the CRO and also provides periodic reports related to operational risk to the Board's Risk Committee. Technology, Third Party and Information Risk Oversight, which is part of the Operational Risk Group, has oversight responsibility for technology risk, third-party risk, information risk management, and information security risk. Enterprise Data Governance, which is part of the Operational Risk Group, has oversight responsibility for data management risk. Oversight of human capital risk, an operational risk, is performed by the Human Resources function with reporting paths to relevant management governance committees including to the ERCC.

Information security is a significant operational risk for financial institutions such as Wells Fargo, and includes the risk arising from unauthorized access, use, disclosure, disruption, modification, or destruction of information or information systems. The Board is actively engaged in the oversight of the Company's information security risk management and cyber defense programs. The Board's Risk Committee has primary oversight responsibility for information security risk and approves the Company's information security program, which includes the information security policy and the cyber defense program. A Technology Subcommittee of the Risk Committee assists the Risk Committee in providing oversight of technology, information security, and cybersecurity risks as well as data management risk. The Technology Subcommittee reviews and recommends to the Risk Committee for approval any significant supporting information security risk (including cybersecurity risk), technology risk, and data management risk programs and/or policies, including the Company's data management strategy. The Technology Subcommittee reports to the Risk Committee and both provide updates to the full Board.

Wells Fargo and other financial institutions continue to be the target of various evolving and adaptive cyber attacks, including malware and denial-of-service, as part of an effort to disrupt the operations of financial institutions, potentially test their cybersecurity capabilities, commit fraud, or obtain confidential, proprietary or other information. Cyber attacks have also focused on targeting online applications and services, such as online banking, as well as cloud-based services provided by third parties, and have targeted the infrastructure of the internet causing the widespread unavailability of websites and degrading website performance. Wells Fargo has not experienced any material losses relating to these or other types of cyber attacks. Cybersecurity risk is a priority for Wells Fargo, and we continue to develop and enhance our controls, processes and systems in order to protect our networks, computers, software and data from attack, damage or unauthorized access. Wells

Fargo is also proactively involved in industry cybersecurity efforts and working with other parties, including our third-party service providers and governmental agencies, to continue to enhance defenses and improve resiliency to cybersecurity threats. See the "Risk Factors" section in this Report for additional information regarding the risks associated with a failure or breach of our operational or security systems or infrastructure, including as a result of cyber attacks.

Compliance Risk Management

Compliance risk (a type of operational risk) is the risk resulting from the failure to comply with laws (legislation, regulations and rules) and regulatory guidance, and the failure to appropriately address associated impacts, including to customers. Compliance risk encompasses violations of applicable internal policies, program requirements, procedures, and standards related to ethical principles applicable to the banking industry.

The Board's Risk Committee has primary oversight responsibility for all aspects of compliance risk, including financial crimes risk. As part of its oversight responsibilities, the Board's Risk Committee approves the compliance risk and financial crimes risk statement of risk appetites including inner and outer boundary thresholds, reviews and approves significant supporting compliance risk and financial crimes risk policies and programs, and oversees the Company's compliance risk management and financial crimes risk management programs. A Compliance Subcommittee of the Risk Committee assists the Risk Committee in providing oversight of the Company's compliance program and compliance risk management. The Compliance Subcommittee reports to the Risk Committee and both provide updates to the full Board.

Conduct risk, a sub-category of compliance risk, is the risk of inappropriate, unethical, or unlawful behavior on the part of team members or individuals acting on behalf of the Company, caused by deliberate or unintentional actions or business practices. The Board has enhanced its oversight of conduct risk to oversee the alignment of team member conduct to the Company's risk appetite (which the Board approves annually). The Board's Risk Committee has primary oversight responsibility for enterprise-wide conduct risk and risk management components of the Company's culture, while the responsibilities of the Board's Human Resources Committee include oversight of the Company's enterprise-wide culture, Code of Ethics and Business Conduct, conflicts of interest program, human capital management (including talent management and succession planning), performance management program, and incentive compensation risk management program.

At the management level, Wells Fargo Compliance, which is part of IRM, monitors the implementation of the Company's compliance and conduct risk programs. Financial Crimes Risk Management, which is part of Wells Fargo Compliance, oversees and monitors financial crimes risk. Wells Fargo Compliance reports to the CRO and also provides periodic reports related to compliance risk to the Board's Risk Committee and Compliance Subcommittee. We continue to enhance our oversight of operational and compliance risk management, including as required by the FRB's February 2, 2018, and the CFPB/OCC's April 20, 2018, consent orders.

Model Risk Management

Model risk (a type of operational risk) is the risk arising from the potential for adverse consequences from decisions made based on model outputs that may be incorrect or used inappropriately.

The Board's Risk Committee has primary oversight responsibility for model risk. As part of its oversight

responsibilities, the Board's Risk Committee oversees the Company's model risk management policy, model validation activities, model performance, model issue remediation status, and adherence to model risk appetite metrics.

At the management level, the Model Risk function, which is part of IRM, has primary oversight responsibility for model risk and is responsible for governance, validation and monitoring of model risk across the Company. The Model Risk function reports to the CRO and also provides periodic reports related to model risk to the Board's Risk Committee.

Strategic Risk Management

Strategic risk is the risk to earnings, capital, or liquidity arising from adverse business decisions, improper implementation of strategic initiatives, or inadequate responses to changes in the external operating environment.

The Board has primary oversight responsibility for strategic planning and oversees management's development and implementation of and approves the Company's strategic plan, and considers whether it is aligned with the Company's risk appetite and risk management effectiveness. Management develops, executes and recommends strategic corporate transactions and the Board evaluates management's proposals, including their impact on the Company's risk profile and financial position. The Board's Risk Committee has primary oversight responsibility for the Company's strategic risk and the adequacy of the Company's strategic risk management program, including associated risk management practices, processes and controls. The Board's Risk Committee also receives updates from management regarding new business initiatives activity and risks related to new or changing products, as appropriate.

At the management level, the Strategic Risk Oversight function, which is part of IRM, has primary oversight responsibility for strategic risk. The Strategic Risk Oversight function reports into the CRO and also provides periodic reports related to strategic risk to the Board's Risk Committee.

Reputation Risk Management

Reputation risk is the risk arising from the potential that negative stakeholder opinion or negative publicity regarding the Company's business practices, whether true or not, will adversely impact current or projected financial conditions and resilience, cause a decline in the customer base, or result in costly litigation. Stakeholders include team members, customers, communities, shareholders, regulators, elected officials, advocacy groups, and media organizations.

The Board's Risk Committee has primary oversight responsibility for company-wide reputation risk, while each Board committee has reputation risk oversight responsibilities related to their primary oversight responsibilities. As part of its oversight responsibilities, the Board's Risk Committee receives reports from management that help it monitor how effectively the Company is managing reputation risk. As part of its oversight responsibilities for social and public responsibility matters, the Board's Corporate Responsibility Committee also receives reports from management relating to the Company's brand and stakeholder perception of the Company.

At the management level, the Reputation Risk Oversight function, which is part of IRM, has primary oversight responsibility for reputation risk. The Reputation Risk Oversight function reports into the CRO and also provides periodic reports related to reputation risk to the Board's Risk Committee.

Credit Risk Management

We define credit risk as the risk of loss associated with a borrower or counterparty default (failure to meet obligations in accordance with agreed upon terms). Credit risk exists with many of our assets and exposures such as debt security holdings, certain derivatives, and loans.

The Board's Credit Committee has primary oversight responsibility for credit risk. At the management level, Credit Risk, which is part of IRM, has primary oversight responsibility for credit risk. Credit Risk reports to the CRO and also provides periodic reports related to credit risk to the Board's Credit Committee.

The following discussion focuses on our loan portfolios, which represent the largest component of assets on our balance sheet for which we have credit risk. Table 17 presents our total loans outstanding by portfolio segment and class of financing receivable.

Table 17: Total Loans Outstanding by Portfolio Segment and Class of Financing Receivable

(in millions)	Dec 31, 2019	Dec 31, 2018
Commercial:		
Commercial and industrial	\$ 354,125	350,199
Real estate mortgage	121,824	121,014
Real estate construction	19,939	22,496
Lease financing	19,831	19,696
Total commercial	515,719	513,405
Consumer:		
Real estate 1-4 family first mortgage	293,847	285,065
Real estate 1-4 family junior lien mortgage	29,509	34,398
Credit card	41,013	39,025
Automobile	47,873	45,069
Other revolving credit and installment	34,304	36,148
Total consumer	446,546	439,705
Total loans	\$ 962,265	953,110

We manage our credit risk by establishing what we believe are sound credit policies for underwriting new business, while monitoring and reviewing the performance of our existing loan portfolios. We employ various credit risk management and monitoring activities to mitigate risks associated with multiple risk factors affecting loans we hold, could acquire or originate including:

- Loan concentrations and related credit quality
- Counterparty credit risk
- Economic and market conditions
- Legislative or regulatory mandates
- Changes in interest rates
- Merger and acquisition activities
- Reputation risk

Our credit risk management oversight process is governed centrally, but provides for decentralized management and accountability by our lines of business. Our overall credit process includes comprehensive credit policies, disciplined credit underwriting, frequent and detailed risk measurement and modeling, extensive credit training programs, and a continual loan review and audit process.

Risk Management – Credit Risk Management (continued)

A key to our credit risk management is adherence to a well-controlled underwriting process, which we believe is appropriate for the needs of our customers as well as investors who purchase the loans or securities collateralized by the loans.

Credit Quality Overview Solid credit quality continued in 2019, as our net charge-off rate remained low at 0.29% of average total loans. Our loss rate reflected improvements in the credit performance of our automobile portfolio, partially offset by a lower volume of recoveries in other loan portfolios. In particular:

- Nonaccrual loans were \$5.3 billion at December 31, 2019, down from \$6.5 billion at December 31, 2018. Commercial nonaccrual loans increased to \$2.3 billion at December 31, 2019, compared with \$2.2 billion at December 31, 2018, and consumer nonaccrual loans declined to \$3.1 billion at December 31, 2019, compared with \$4.3 billion at December 31, 2018. A decline in real estate 1-4 family mortgage nonaccrual loans reflecting an improved housing market, sales of nonaccrual mortgage loans, and the reclassification of nonaccrual mortgage loans to MLHFS was partially offset by an increase in commercial and industrial nonaccrual loans driven by the oil and gas portfolio. Nonaccrual loans represented 0.56% of total loans at December 31, 2019, compared with 0.68% at December 31, 2018.
- Net charge-offs as a percentage of our average commercial and consumer portfolios were 0.13% and 0.48%, respectively, in 2019, compared with 0.09% and 0.52% in 2018.
- Loans that are not government insured/guaranteed and 90 days or more past due and still accruing were \$78 million and \$855 million in our commercial and consumer portfolios, respectively, at December 31, 2019, compared with \$94 million and \$885 million at December 31, 2018.
- Our provision for credit losses was \$2.7 billion in 2019, compared with \$1.7 billion in 2018. The provision for credit losses in both 2019 and 2018 reflected continuing solid underlying credit performance. The provision for credit losses in 2018 also reflected a higher level of credit quality improvement compared with 2019, as well as an improvement in the outlook associated with 2017 hurricane-related losses.
- The allowance for credit losses declined to \$10.5 billion, or 1.09% of total loans, at December 31, 2019, compared with \$10.7 billion, or 1.12%, at December 31, 2018.

Additional information on our loan portfolios and our credit quality trends follows.

PURCHASED CREDIT-IMPAIRED (PCI) LOANS Loans acquired with evidence of credit deterioration since their origination and where it is probable that we will not collect all contractually required principal and interest payments are PCI loans. A nonaccretable difference is established for PCI loans to absorb losses expected on the contractual amounts of those loans. Amounts absorbed by the nonaccretable difference do not affect the income statement or the allowance for credit losses. The carrying value of PCI loans at December 31, 2019, totaled \$568 million, compared with \$5.0 billion at December 31, 2018. The decline in carrying value was due to the sale of \$4.0 billion of PCI loans, predominantly Pick-a-Pay, during 2019 and paydowns.

For additional information on PCI loans, see the “Risk Management – Credit Risk Management – Real Estate 1-4 Family Mortgage Loans – Pick-a-Pay Portfolio” section in this Report, Note 1 (Summary of Significant Accounting Policies) and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Significant Loan Portfolio Reviews Measuring and monitoring our credit risk is an ongoing process that tracks delinquencies, collateral values, Fair Isaac Corporation (FICO) scores, economic trends by geographic areas, loan-level risk grading for certain portfolios (typically commercial) and other indications of credit risk. Our credit risk monitoring process is designed to enable early identification of developing risk and to support our determination of an appropriate allowance for credit losses. The following discussion provides additional characteristics and analysis of our significant portfolios. See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for more analysis and credit metric information for each of the following portfolios.

COMMERCIAL AND INDUSTRIAL LOANS AND LEASE FINANCING For purposes of portfolio risk management, we aggregate commercial and industrial loans and lease financing according to market segmentation and standard industry codes. We generally subject commercial and industrial loans and lease financing to individual risk assessment using our internal borrower and collateral quality ratings. Our ratings are aligned to regulatory definitions of pass and criticized categories with criticized segmented among special mention, substandard, doubtful and loss categories.

The commercial and industrial loans and lease financing portfolio totaled \$374.0 billion, or 39% of total loans, at December 31, 2019. The net charge-off rate for this portfolio was 0.18% in 2019, compared with 0.13% in 2018. At December 31, 2019, 0.44% of this portfolio was nonaccruing, compared with 0.43% at December 31, 2018. Nonaccrual loans in this portfolio increased \$64 million in 2019, due to a customer in the utilities industry, as well as increases in the oil, gas and pipeline portfolio, partially offset by improvement across various industry categories. Also, \$16.6 billion of the commercial and industrial loan and lease financing portfolio was internally classified as criticized in accordance with regulatory guidance at December 31, 2019, compared with \$15.8 billion at December 31, 2018.

Most of our commercial and industrial loans and lease financing portfolio is secured by short-term assets, such as accounts receivable, inventory and debt securities, as well as long-lived assets, such as equipment and other business assets. Generally, the collateral securing this portfolio represents a secondary source of repayment.

Table 18 provides our commercial and industrial loans and lease financing by industry, and includes non-U.S. loans of \$71.7 billion and \$63.7 billion at December 31, 2019 and 2018, respectively. Significant industry concentrations of non-U.S. loans include \$31.2 billion and \$25.6 billion in the financials except banks category and \$19.9 billion and \$18.1 billion in the banks category at December 31, 2019 and 2018, respectively. The industry categories were updated in 2019 to align with industry groupings that our regulators use to monitor industry concentration risks.

Loans to financials except banks, our largest industry concentration, were \$117.3 billion, or 12% of total outstanding loans, at December 31, 2019, compared with \$105.9 billion, or

11% of total outstanding loans, at December 31, 2018. This industry category includes loans to investment firms, financial vehicles, and non-bank creditors, including those that invest in financial assets backed predominantly by commercial or residential real estate or consumer loan assets. We limit our loan amounts to a percentage of the value of the underlying assets considering underlying credit risk, asset duration, and ongoing performance.

Oil, gas and pipeline loans totaled \$13.6 billion, or 1% of total outstanding loans, at December 31, 2019, compared with \$12.8 billion, or 1% of total outstanding loans, at December 31, 2018.

Table 18: Commercial and Industrial Loans and Lease Financing by Industry (1)

(in millions)	December 31, 2019			December 31, 2018		
	Nonaccrual loans	Total portfolio	% of total loans	Nonaccrual loans	Total portfolio	% of total loans
Financials except banks	\$ 112	117,312	12%	\$ 305	105,925	11%
Equipment, machinery and parts manufacturing	36	23,457	2	47	20,850	2
Technology, telecom and media	28	22,447	2	26	25,681	3
Real estate and construction	47	22,011	2	31	23,380	2
Banks	—	20,070	2	—	18,407	2
Retail	105	19,923	2	87	19,541	2
Materials and commodities	33	16,375	2	136	18,688	2
Automobile related	24	15,996	2	16	16,801	2
Food and beverage manufacturing	9	14,991	2	48	15,448	2
Health care and pharmaceuticals	28	14,920	2	124	15,529	2
Oil, gas and pipelines	615	13,562	1	417	12,840	1
Entertainment and recreation	44	13,462	1	33	14,045	1
Transportation services	224	10,957	1	176	12,029	1
Commercial services	50	10,455	1	48	10,591	1
Agribusiness	35	7,539	1	46	7,996	1
Utilities	224	5,995	1	6	5,756	1
Insurance and fiduciaries	1	5,525	1	1	5,510	1
Government and education	6	5,363	1	3	6,160	1
Other (2)	19	13,596	1	26	14,718	1
Total	\$ 1,640	373,956	39%	\$ 1,576	369,895	39%

(1) Industry categories are based on the North American Industry Classification System and the amounts reported include non-U.S. loans. The industry categories were updated in 2019 to align with industry groupings that our regulators use to monitor industry concentration risks. The amounts for December 31, 2018, have been reclassified to conform with the current period presentation. See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for a breakout of non-U.S. commercial loans.

(2) No other single industry had total loans in excess of \$4.7 billion and \$4.5 billion at December 31, 2019 and 2018, respectively.

Risk mitigation actions, including the restructuring of repayment terms, securing collateral or guarantees, and entering into extensions, are based on a re-underwriting of the loan and our assessment of the borrower's ability to perform under the agreed-upon terms. Extension terms generally range from six to thirty-six months and may require that the borrower provide additional economic support in the form of partial repayment, or additional collateral or guarantees. In cases where the value of collateral or financial condition of the borrower is insufficient to repay our loan, we may rely upon the support of an outside repayment guarantee in providing the extension.

Our ability to seek performance under a guarantee is directly related to the guarantor's creditworthiness, capacity and willingness to perform, which is evaluated on an annual basis, or more frequently as warranted. Our evaluation is based on the most current financial information available and is focused on various key financial metrics, including net worth, leverage, and current and future liquidity. We consider the guarantor's reputation, creditworthiness, and willingness to work with us based on our analysis, as well as other lenders' experience with

the guarantor. Our assessment of the guarantor's credit strength is reflected in our loan risk ratings for such loans. The loan risk rating and accruing status are important factors in our allowance for credit losses methodology.

In considering the accrual status of the loan, we evaluate the collateral and future cash flows, as well as the anticipated support of any repayment guarantor. In many cases, the strength of the guarantor provides sufficient assurance that full repayment of the loan is expected. When full and timely collection of the loan becomes uncertain, including the performance of the guarantor, we place the loan on nonaccrual status. As appropriate, we also charge the loan down in accordance with our charge-off policies, generally to the net realizable value of the collateral securing the loan, if any.

Risk Management – Credit Risk Management (continued)

COMMERCIAL REAL ESTATE (CRE) We generally subject CRE loans to individual risk assessment using our internal borrower and collateral quality ratings. Our ratings are aligned to regulatory definitions of pass and criticized categories with criticized segmented among special mention, substandard, doubtful and loss categories. The CRE portfolio, which included \$8.4 billion of non-U.S. CRE loans, totaled \$141.8 billion, or 15% of total loans, at December 31, 2019, and consisted of \$121.8 billion of mortgage loans and \$19.9 billion of construction loans.

Table 19 summarizes CRE loans by state and property type with the related nonaccrual totals. The portfolio is diversified both geographically and by property type. The largest

geographic concentrations of CRE loans are in California, New York, Florida and Texas, which combined represented 49% of the total CRE portfolio. By property type, the largest concentrations are office buildings at 26% and apartments at 17% of the portfolio. CRE nonaccrual loans totaled 0.43% of the CRE outstanding balance at both December 31, 2019, and December 31, 2018. At December 31, 2019, we had \$3.8 billion of criticized CRE mortgage loans, compared with \$4.5 billion at December 31, 2018, and \$187 million of criticized CRE construction loans, compared with \$289 million at December 31, 2018.

Table 19: CRE Loans by State and Property Type

(in millions)	December 31, 2019							% of total loans
	Real estate mortgage		Real estate construction		Total			
	Nonaccrual loans	Total portfolio	Nonaccrual loans	Total portfolio	Nonaccrual loans	Total portfolio		
By state:								
California	\$ 149	32,079	12	4,415	161	36,494		4%
New York	21	12,076	2	1,863	23	13,939		1
Florida	23	8,081	4	1,450	27	9,531		1
Texas	42	7,877	5	1,389	47	9,266		1
Arizona	70	4,212	—	303	70	4,515		1
Washington	9	3,757	—	709	9	4,466		1
North Carolina	17	3,823	4	540	21	4,363		1
Georgia	15	3,819	—	401	15	4,220		*
Virginia	6	2,808	—	680	6	3,488		*
New Jersey	16	2,846	—	628	16	3,474		*
Other	205	40,446	14	7,561	219	48,007	(1)	5
Total	\$ 573	121,824	41	19,939	614	141,763		15%
By property:								
Office buildings	\$ 105	34,188	6	2,919	111	37,107		4%
Apartments	9	18,243	—	6,415	9	24,658		3
Industrial/warehouse	81	15,813	2	1,492	83	17,305		2
Retail (excluding shopping center)	128	14,510	5	210	133	14,720		2
Shopping center	2	10,816	—	1,313	2	12,129		1
Hotel/motel	16	10,319	—	1,459	16	11,778		1
Mixed use properties (2)	92	6,377	1	487	93	6,864		1
Institutional	39	3,617	10	1,924	49	5,541		*
Collateral pool	—	2,328	—	198	—	2,526		*
Agriculture	91	2,116	—	10	91	2,126		*
Other	10	3,497	17	3,512	27	7,009		1
Total	\$ 573	121,824	41	19,939	614	141,763		15%

* Less than 1%.

(1) Includes 40 states; no state had loans in excess of \$3.5 billion.

(2) Mixed use properties combines residential, commercial, cultural, and other usage within the same building. This also includes data centers, flexible spaces leased to multiple tenants, light manufacturing, and other specialized uses.

NON-U.S. LOANS Our classification of non-U.S. loans is based on whether the borrower's primary address is outside of the United States. At December 31, 2019, non-U.S. loans totaled \$80.5 billion, representing approximately 8% of our total consolidated loans outstanding, compared with \$71.9 billion, or approximately 8% of total consolidated loans outstanding, at December 31, 2018. Non-U.S. loans were approximately 4% of our consolidated total assets at both December 31, 2019, and December 31, 2018.

COUNTRY RISK EXPOSURE Our country risk monitoring process incorporates centralized monitoring of economic, political, social, legal, and transfer risks in countries where we do or plan to do

business, along with frequent dialogue with our customers, counterparties and regulatory agencies. We establish exposure limits for each country through a centralized oversight process based on customer needs, and through consideration of the relevant and distinct risk of each country. We monitor exposures closely and adjust our country limits in response to changing conditions.

We evaluate our individual country risk exposure based on our assessment of the borrower's ability to repay, which gives consideration for allowable transfers of risk, such as guarantees and collateral, and may be different from the reporting based on the borrower's primary address. Our largest single country exposure outside the U.S. based on our assessment of risk at

December 31, 2019, was the United Kingdom, which totaled \$31.6 billion, and included \$8.0 billion of sovereign claims. Our United Kingdom sovereign claims arise predominantly from deposits we have placed with the Bank of England pursuant to regulatory requirements in support of our London branch.

The United Kingdom withdrew from the European Union (Brexit) on January 31, 2020, and is currently subject to a transition period during which the terms and conditions of its exit are being negotiated. As the United Kingdom exits from the European Union, our primary goal is to continue to serve our existing clients in the United Kingdom and the European Union, as well as to continue to meet the needs of our domestic clients as they do business in those locations. We have an existing authorized bank in Ireland and an asset management entity in Luxembourg. Additionally, we established a broker dealer in France. We are in the process of leveraging these entities to continue to serve clients in the European Union and continue to take actions to update our business operations in the United Kingdom and European Union, including implementing new

supplier contracts and staffing arrangements. For additional information on risks associated with Brexit, see the “Risk Factors” section in this Report.

Table 20 provides information regarding our top 20 exposures by country (excluding the U.S.) and our Eurozone exposure, based on our assessment of risk, which gives consideration to the country of any guarantors and/or underlying collateral. With respect to Table 20:

- Lending exposure includes outstanding loans, unfunded credit commitments, and deposits with non-U.S. banks. These balances are presented prior to the deduction of allowance for credit losses or collateral received under the terms of the credit agreements, if any.
- Securities exposure represents debt and equity securities of non-U.S. issuers. Long and short positions are netted, and net short positions are reflected as negative exposure.
- Derivatives and other exposure represents foreign exchange contracts, derivative contracts, securities resale agreements, and securities lending agreements.

Table 20: Select Country Exposures

(in millions)	December 31, 2019								
	Lending		Securities		Derivatives and other		Total exposure		
	Sovereign	Non-sovereign	Sovereign	Non-sovereign	Sovereign	Non-sovereign	Sovereign	Non-sovereign (1)	Total
Top 20 country exposures:									
United Kingdom	\$ 7,989	21,617	—	881	2	1,067	7,991	23,565	31,556
Canada	36	17,661	(68)	194	—	272	(32)	18,127	18,095
Cayman Islands	—	7,442	—	31	—	126	—	7,599	7,599
Ireland	225	4,971	—	102	—	137	225	5,210	5,435
China	—	4,022	5	408	59	20	64	4,450	4,514
Luxembourg	—	3,636	—	654	—	83	—	4,373	4,373
Bermuda	—	3,824	—	103	—	54	—	3,981	3,981
Guernsey	—	3,554	—	1	—	65	—	3,620	3,620
Germany	—	2,773	—	128	3	42	3	2,943	2,946
Netherlands	—	2,019	—	364	20	126	20	2,509	2,529
South Korea	—	2,023	—	268	—	6	—	2,297	2,297
Brazil	—	2,075	—	1	1	1	1	2,077	2,078
France	—	1,882	—	137	29	9	29	2,028	2,057
Australia	—	1,720	—	145	—	8	—	1,873	1,873
India	—	1,734	—	130	—	—	—	1,864	1,864
Chile	—	1,698	—	(1)	—	—	—	1,697	1,697
Switzerland	—	1,482	—	(51)	—	57	—	1,488	1,488
Taiwan	—	1,369	—	(6)	1	2	1	1,365	1,366
United Arab Emirates	—	1,323	—	—	—	3	—	1,326	1,326
Hong Kong	—	1,333	—	(14)	1	2	1	1,321	1,322
Total top 20 country exposures	\$ 8,250	88,158	(63)	3,475	116	2,080	8,303	93,713	102,016
Eurozone exposure:									
Eurozone countries included in Top 20 above (2)	\$ 225	15,281	—	1,385	52	397	277	17,063	17,340
Spain	—	401	—	466	—	30	—	897	897
Belgium	—	766	—	(72)	—	1	—	695	695
Austria	—	305	—	—	—	—	—	305	305
Other Eurozone countries	—	230	—	55	—	1	—	286	286
Total Eurozone exposure	\$ 225	16,983	—	1,834	52	429	277	19,246	19,523

(1) For countries presented in the table, total non-sovereign exposure comprises \$53.1 billion exposure to financial institutions and \$42.8 billion to non-financial corporations at December 31, 2019.

(2) Consists of exposure to Ireland, Luxembourg, Germany, Netherlands and France, which are included in the Top 20 country exposures.

Risk Management – Credit Risk Management (continued)

REAL ESTATE 1-4 FAMILY MORTGAGE LOANS Our real estate 1-4 family mortgage loan portfolio is composed of both first and junior lien mortgage loans, which are presented in Table 21.

Table 21: Real Estate 1-4 Family Mortgage Loans

(in millions)	December 31, 2019		December 31, 2018	
	Balance	% of portfolio	Balance	% of portfolio
Real estate 1-4 family first mortgage	\$ 293,847	91%	\$ 285,065	89%
Real estate 1-4 family junior lien mortgage	29,509	9	34,398	11
Total real estate 1-4 family mortgage loans	\$ 323,356	100%	\$ 319,463	100%

The real estate 1-4 family mortgage loan portfolio includes some loans with adjustable-rate features and some with an interest-only feature as part of the loan terms. Interest-only loans were approximately 3% and 4% of total loans at December 31, 2019 and 2018, respectively. We believe we have manageable adjustable-rate mortgage (ARM) reset risk across our mortgage loan portfolios. We do not offer option ARM products, nor do we offer variable-rate mortgage products with fixed payment amounts, commonly referred to within the financial services industry as negative amortizing mortgage loans. The option ARMs we do have are included in the Pick-a-Pay portfolio which was acquired from Wachovia. For more information, see the “Pick-a-Pay Portfolio” section in this Report.

We continue to modify real estate 1-4 family mortgage loans to assist homeowners and other borrowers experiencing financial difficulties. Loans are generally underwritten at the time of the modification in accordance with underwriting guidelines established for our loan modification programs. Under these programs, we may provide concessions such as interest rate reductions, forbearance of principal, and in some cases, principal forgiveness. These programs generally include trial payment periods of three to four months, and after successful completion and compliance with terms during this period, the loan is permanently modified. Loans included under these programs are accounted for as troubled debt restructurings (TDRs) at the start of a trial period or at the time of permanent modification, if no trial period is used. See the “Critical Accounting Policies – Allowance for Credit Losses” section in this Report for discussion on how we determine the allowance for credit losses attributable to our modified residential real estate portfolios.

Part of our credit monitoring includes tracking delinquency, current FICO scores and loan/combined loan to collateral values (LTV/CLTV) on the entire real estate 1-4 family mortgage loan portfolio. These credit risk indicators on the non-PCI mortgage portfolio exclude government insured/guaranteed loans. Loans 30 days or more delinquent at December 31, 2019, totaled \$3.0 billion, or 1% of total non-PCI mortgages, compared with \$4.0 billion, or 1%, at December 31, 2018. Loans with FICO scores lower than 640 totaled \$7.6 billion, or 2% of total non-PCI mortgages at December 31, 2019, compared with \$9.7 billion, or 3%, at December 31, 2018. Mortgages with a LTV/CLTV greater than 100% totaled \$2.5 billion at December 31, 2019, or 1% of total non-PCI mortgages, compared with \$3.9 billion, or 1%, at December 31, 2018. Information regarding credit quality indicators, including PCI credit quality indicators, can be found in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Real estate 1-4 family mortgage loans by state are presented in Table 22. Our real estate 1-4 family non-PCI mortgage loans to borrowers in California represented 13% of total loans at December 31, 2019, located predominantly within the larger metropolitan areas, with no single California metropolitan area consisting of more than 5% of total loans. We monitor changes in real estate values and underlying economic or market conditions for all geographic areas of our real estate 1-4 family mortgage portfolios as part of our credit risk management process. Our underwriting and periodic review of loans and lines secured by residential real estate collateral includes original appraisals adjusted for the change in Home Price Index (HPI) or estimates from automated valuation models (AVMs) to support property values. AVMs are computer-based tools used to estimate the market value of homes. AVMs are a lower-cost alternative to appraisals and support valuations of large numbers of properties in a short period of time using market comparables and price trends for local market areas. The primary risk associated with the use of AVMs is that the value of an individual property may vary significantly from the average for the market area. We have processes to periodically validate AVMs and specific risk management guidelines addressing the circumstances when AVMs may be used. AVMs are not allowed in real estate 1-4 family mortgage origination underwriting. Broker evaluations and enhanced desktop appraisal reports are allowed in junior lien originations and some first lien line of credit originations up to \$250,000. An appraisal is required for all real estate 1-4 family mortgage commitments greater than \$250,000. Additional information about appraisals, AVMs, and our policy for their use can be found in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 22: Real Estate 1-4 Family Mortgage Loans by State

(in millions)	December 31, 2019			
	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Total real estate 1-4 family mortgage	% of total loans
Real estate 1-4 family mortgage loans (excluding PCI):				
California	\$ 118,256	8,054	126,310	13%
New York	31,336	1,508	32,844	3
New Jersey	14,113	2,744	16,857	2
Florida	11,804	2,600	14,404	2
Washington	10,863	655	11,518	1
Virginia	8,857	1,712	10,569	1
Texas	8,963	596	9,559	1
North Carolina	5,839	1,388	7,227	1
Colorado	6,382	664	7,046	1
Other (1)	65,709	9,575	75,284	8
Government insured/guaranteed loans (2)	11,170	—	11,170	1
Real estate 1-4 family loans (excluding PCI)	293,292	29,496	322,788	34
Real estate 1-4 family PCI loans	555	13	568	—
Total	\$ 293,847	29,509	323,356	34%

(1) Consists of 41 states; no state had loans in excess of \$7.0 billion.

(2) Represents loans whose repayments are predominantly insured by the Federal Housing Administration (FHA) or guaranteed by the Department of Veterans Affairs (VA).

First Mortgage Portfolio Our total real estate 1-4 family first lien mortgage portfolio (first mortgage) increased \$8.8 billion in 2019. Mortgage loan originations of \$67.4 billion in 2019 were partially offset by paydowns and \$4.0 billion of sales of PCI loans, predominantly Pick-a-Pay. Also, we purchased \$3.3 billion of mortgage loans in 2019 as a result of exercising servicer cleanup calls. In addition, during 2019, we reclassified \$1.9 billion of existing mortgage loans to MLHFS in anticipation of future whole loan sales. We also originated \$3.4 billion of nonconforming mortgage loan originations as MLHFS in 2019, in anticipation of the issuance of residential mortgage-backed securities.

The credit performance associated with our real estate 1-4 family first mortgage portfolio remained strong in 2019, as

measured through nonaccrual loans and net charge-offs. Nonaccrual loans decreased to \$2.2 billion at December 31, 2019, compared with \$3.2 billion at December 31, 2018, driven by nonaccrual loan sales, the reclassification of nonaccrual loans to MLHFS in anticipation of future sales, and overall continued credit improvement. Net charge-offs as a percentage of average real estate 1-4 family first mortgage loans was a net recovery of 0.02% in 2019, compared with a net recovery of 0.03% in 2018.

Table 23 shows certain delinquency and loss information for the first mortgage portfolio and lists the top five states by outstanding balance.

Table 23: First Mortgage Portfolio Performance

(in millions)	Outstanding balance		% of loans 30 days or more past due		Loss (recovery) rate	
	December 31,		December 31,		Year ended December 31,	
	2019	2018	2019	2018	2019	2018
California	\$ 118,256	109,092	0.48%	0.68	(0.02)	(0.06)
New York	31,336	28,954	0.83	1.12	0.02	0.04
New Jersey	14,113	13,811	1.40	1.91	0.02	0.03
Florida	11,804	12,350	1.81	2.58	(0.06)	(0.17)
Washington	10,863	9,677	0.29	0.57	(0.02)	(0.06)
Other	95,750	93,261	1.20	1.70	(0.02)	(0.02)
Total	282,122	267,145	0.86	1.23	(0.02)	(0.03)
Government insured/guaranteed loans	11,170	12,932				
PCI	555	4,988				
Total first mortgage portfolio	\$ 293,847	285,065				

Risk Management – Credit Risk Management (continued)

Pick-a-Pay Portfolio The Pick-a-Pay portfolio was one of the consumer residential mortgage portfolios we acquired from Wachovia. The Pick-a-Pay portfolio is included in consumer real estate 1-4 family first mortgage loans throughout this Report. Pick-a-Pay option payment loans may have fixed or adjustable

rates with payment options that may include a minimum payment, an interest-only payment or fully amortizing payment (both 15- and 30-year options). Table 24 provides balances by types of loans as of December 31, 2019.

Table 24: Pick-a-Pay Portfolio

(in millions)	December 31,			
	2019		2018	
	Adjusted unpaid principal balance (1)	% of total	Adjusted unpaid principal balance (1)	% of total
Option payment loans	\$ 4,571	50%	\$ 8,813	50%
Non-option payment adjustable-rate and fixed-rate loans	2,161	24	2,848	16
Full-term loan modifications	2,320	26	6,080	34
Total adjusted unpaid principal balance	\$ 9,052	100%	\$ 17,741	100%
Total carrying value	\$ 8,936		\$ 16,115	

(1) Adjusted unpaid principal balance includes write-downs taken on loans where severe delinquency (normally 180 days) or other indications of severe borrower financial stress exist that indicate there will be a loss of contractually due amounts upon final resolution of the loan.

Our Pick-a-Pay portfolio included PCI loans with a carrying value of \$519 million at December 31, 2019, compared with \$4.9 billion at December 31, 2018. During 2019, we sold \$4.0 billion of Pick-a-Pay PCI loans that resulted in a gain of \$1.6 billion. The accretable yield balance of our Pick-a-Pay PCI loan portfolio was \$134 million (\$229 million for all PCI loans) at December 31, 2019, compared with \$2.8 billion (\$3.0 billion for all PCI loans) at December 31, 2018. The decrease was predominantly due to Pick-a-Pay PCI loan sales. The estimated weighted-average life was approximately 5.1 years and 5.5 years at December 31, 2019 and 2018, respectively. The accretable yield percentage for Pick-a-Pay PCI loans for fourth quarter 2019 was 11.69%.

For additional information on PCI loans, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Junior Lien Mortgage Portfolio The junior lien mortgage portfolio consists of residential mortgage lines and loans that are subordinate in rights to an existing lien on the same property. It is not unusual for these lines and loans to have draw periods, interest-only payments, balloon payments, adjustable rates and similar features. Junior lien loan products are mostly amortizing payment loans with fixed interest rates and repayment periods between five to 30 years.

We continuously monitor the credit performance of our junior lien mortgage portfolio for trends and factors that influence the frequency and severity of loss, such as junior lien mortgage performance when the first mortgage loan is delinquent. Table 25 shows certain delinquency and loss information for the junior lien mortgage portfolio and lists the top five states by outstanding balance. The decrease in outstanding balances since December 31, 2018, predominantly

reflected loan paydowns. As of December 31, 2019, 4% of the outstanding balance of the junior lien mortgage portfolio was associated with loans that had a combined loan to value (CLTV) ratio in excess of 100%. Of those junior lien mortgages with a CLTV ratio in excess of 100%, 3% were 30 days or more past due. CLTV means the ratio of the total loan balance of first mortgages and junior lien mortgages (including unused line amounts for credit line products) to property collateral value. The unsecured portion (the outstanding amount that was in excess of the most recent property collateral value) of the outstanding balances of these loans totaled 1% of the junior lien mortgage portfolio at December 31, 2019. For additional information on consumer loans by LTV/CLTV, see Table 6.12 in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 25: Junior Lien Mortgage Portfolio Performance

(in millions)	Outstanding balance		% of loans 30 days or more past due		Loss (recovery) rate	
	December 31,		December 31,		Year ended December 31,	
	2019	2018	2019	2018	2019	2018
California	\$ 8,054	9,338	1.62%	1.67	(0.44)	(0.46)
New Jersey	2,744	3,152	2.74	2.57	0.07	0.25
Florida	2,600	3,140	2.93	2.73	(0.09)	—
Virginia	1,712	2,020	1.97	1.91	(0.02)	0.19
Pennsylvania	1,674	1,929	2.16	2.10	(0.10)	0.15
Other	12,712	14,802	2.05	2.12	(0.18)	(0.07)
Total	29,496	34,381	2.07	2.08	(0.21)	(0.11)
PCI	13	17				
Total junior lien mortgage portfolio	\$ 29,509	34,398				

Risk Management – Credit Risk Management (continued)

Our junior lien, as well as first lien, lines of credit portfolios generally have draw periods of 10, 15 or 20 years with variable interest rate and payment options available during the draw period of (1) interest-only or (2) 1.5% of outstanding principal balance plus accrued interest. As of December 31, 2019, lines of credit in a draw period primarily used the interest-only option. During the draw period, the borrower has the option of converting all or a portion of the line from a variable interest rate to a fixed rate with terms including interest-only payments for a fixed period between three to seven years or a fully amortizing payment with a fixed period between five to 30 years. At the end of the draw period, a line of credit generally converts to an amortizing payment schedule with repayment terms of up to 30 years based on the balance at time of conversion. Certain lines and loans have been structured with a balloon payment, which requires full repayment of the outstanding balance at the end of the term period. The conversion of lines or loans to fully amortizing or balloon payoff may result in a significant payment increase, which can affect some borrowers' ability to repay the outstanding balance.

On a monthly basis, we monitor the payment characteristics of borrowers in our first and junior lien lines of credit portfolios. In December 2019, approximately 46% of these borrowers paid only the minimum amount due and approximately 51% paid more than the minimum amount due. The rest were either

delinquent or paid less than the minimum amount due. For the borrowers with an interest-only payment feature, approximately 30% paid only the minimum amount due and approximately 65% paid more than the minimum amount due.

The lines that enter their amortization period may experience higher delinquencies and higher loss rates than the ones in their draw or term period. We have considered this increased inherent risk in our allowance for credit loss estimate.

In anticipation of our borrowers reaching the end of their contractual commitment, we have created a program to inform, educate and help these borrowers transition from interest-only to fully-amortizing payments or full repayment. We monitor the performance of the borrowers moving through the program in an effort to refine our ongoing program strategy.

Table 26 reflects the outstanding balance of our portfolio of junior lien mortgages, including lines and loans, and first lien lines segregated into scheduled end of draw or end of term periods and products that are currently amortizing, or in balloon repayment status. At December 31, 2019, \$488 million, or 2%, of lines in their draw period were 30 days or more past due, compared with \$399 million, or 4%, of amortizing lines of credit. Included in the amortizing amounts in Table 26 is \$46 million of end-of-term balloon payments which were past due. The unfunded credit commitments for junior and first lien lines totaled \$58.9 billion at December 31, 2019.

Table 26: Junior Lien Mortgage Line and Loan and First Lien Mortgage Line Portfolios Payment Schedule

(in millions)	Outstanding balance December 31, 2019	Scheduled end of draw/term							Amortizing
		2020	2021	2022	2023	2024	2025 and thereafter (1)		
Junior lien lines and loans	\$ 29,496	334	863	3,308	2,276	1,850	11,754	9,111	
First lien lines	10,384	139	414	1,618	1,214	956	4,328	1,715	
Total	\$ 39,880	473	1,277	4,926	3,490	2,806	16,082	10,826	
% of portfolios	100%	1	3	12	9	7	40	28	

(1) Substantially all lines and loans are scheduled to convert to amortizing loans by the end of 2029, with annual scheduled amounts through 2029 ranging from \$1.9 billion to \$4.8 billion and averaging \$3.2 billion per year.

CREDIT CARDS Our credit card portfolio totaled \$41.0 billion at December 31, 2019, which represented 4% of our total outstanding loans. The net charge-off rate for our credit card portfolio was 3.53% for 2019, compared with 3.51% for 2018.

AUTOMOBILE Our automobile portfolio totaled \$47.9 billion at December 31, 2019. The net charge-off rate for our automobile portfolio was 0.67% for 2019, compared with 1.21% for 2018. The decrease in the net charge-off rate for 2019, compared with 2018, was driven by lower early losses on higher quality originations.

OTHER REVOLVING CREDIT AND INSTALLMENT Other revolving credit and installment loans totaled \$34.3 billion at December 31, 2019, and largely included student and securities-based loans. Our private student loan portfolio totaled \$10.6 billion at December 31, 2019. The net charge-off rate for other revolving credit and installment loans was 1.59% for 2019, compared with 1.53% for 2018.

NONPERFORMING ASSETS (NONACCRUAL LOANS AND FORECLOSED ASSETS) Table 27 summarizes nonperforming assets (NPAs) for each of the last five years. We generally place loans on nonaccrual status when:

- the full and timely collection of interest or principal becomes uncertain (generally based on an assessment of the borrower's financial condition and the adequacy of collateral, if any), such as in bankruptcy or other circumstances;
- they are 90 days (120 days with respect to real estate 1-4 family mortgages) past due for interest or principal, unless both well-secured and in the process of collection;
- part of the principal balance has been charged off; or
- for junior lien mortgages, we have evidence that the related first lien mortgage may be 120 days past due or in the process of foreclosure regardless of the junior lien delinquency status.

Credit card loans are not placed on nonaccrual status, but are generally fully charged off when the loan reaches 180 days past due.

Note 1 (Summary of Significant Accounting Policies – Loans) to Financial Statements in this Report describes our accounting policy for nonaccrual and impaired loans and foreclosed assets. For additional information on impaired loans, see Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Nonaccrual loans were \$5.3 billion at December 31, 2019, down \$1.2 billion from a year ago. Consumer nonaccrual loans were down \$1.2 billion from a year ago predominantly due to a decrease in real estate 1-4 family mortgage nonaccrual loans, reflecting broad-based credit improvement, sales of nonaccrual mortgage loans, and the reclassification of nonaccrual mortgage loans to MLHFS. Commercial nonaccrual loans increased \$66 million from a year ago, predominantly due to an increase in commercial and industrial nonaccrual loans, driven by a customer in the utilities industry, as well as increases in the oil, gas and pipeline portfolio, partially offset by credit improvement across various industry categories. Additionally, foreclosed assets decreased \$148 million from December 31, 2018, driven by sales of commercial assets.

Table 27: Nonperforming Assets (Nonaccrual Loans and Foreclosed Assets)

(in millions)	December 31,				
	2019	2018	2017	2016	2015
Nonaccrual loans:					
Commercial:					
Commercial and industrial	\$ 1,545	1,486	1,899	3,199	1,363
Real estate mortgage	573	580	628	685	969
Real estate construction	41	32	37	43	66
Lease financing	95	90	76	115	26
Total commercial	2,254	2,188	2,640	4,042	2,424
Consumer:					
Real estate 1-4 family first mortgage (1)	2,150	3,183	3,732	4,516	6,829
Real estate 1-4 family junior lien mortgage (1)	796	945	1,086	1,206	1,495
Automobile	106	130	130	106	121
Other revolving credit and installment	40	50	58	51	49
Total consumer	3,092	4,308	5,006	5,879	8,494
Total nonaccrual loans (2)(3)	\$ 5,346	6,496	7,646	9,921	10,918
As a percentage of total loans	0.56%	0.68	0.80	1.03	1.19
Foreclosed assets:					
Government insured/guaranteed (4)	\$ 50	88	120	197	446
Non-government insured/guaranteed	253	363	522	781	979
Total foreclosed assets	303	451	642	978	1,425
Total nonperforming assets	\$ 5,649	6,947	8,288	10,899	12,343
As a percentage of total loans	0.59%	0.73	0.87	1.13	1.35

(1) Real estate 1-4 family mortgage loans predominantly insured by the FHA or guaranteed by the VA are not placed on nonaccrual status because they are insured or guaranteed.

(2) Financial information for periods prior to December 31, 2018, has been revised to exclude mortgage loans held for sale (MLHFS), loans held for sale (LHFS) and loans held at fair value of \$390 million, \$463 million, and \$464 million at December 31, 2017, 2016, and 2015, respectively.

(3) Excludes PCI loans because they continue to earn interest income from accretable yield, independent of performance in accordance with their contractual terms.

(4) Consistent with regulatory reporting requirements, foreclosed real estate resulting from government insured/guaranteed loans are classified as nonperforming. Both principal and interest related to these foreclosed real estate assets are collectible because the loans were predominantly insured by the FHA or guaranteed by the VA. Receivables related to the foreclosure of certain government guaranteed real estate mortgage loans are excluded from this table and included in Accounts Receivable in Other Assets. For more information on the classification of certain government-guaranteed mortgage loans upon foreclosure, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Risk Management – Credit Risk Management (continued)

Table 28 provides a summary of nonperforming assets during 2019.

Table 28: Nonperforming Assets by Quarter During 2019

(in millions)	December 31, 2019		September 30, 2019		June 30, 2019		March 31, 2019	
	Balance	% of total loans	Balance	% of total loans	Balance	% of total loans	Balance	% of total loans
Nonaccrual loans:								
Commercial:								
Commercial and industrial	\$ 1,545	0.44%	\$ 1,539	0.44%	\$ 1,634	0.47%	\$ 1,986	0.57%
Real estate mortgage	573	0.47	669	0.55	737	0.60	699	0.57
Real estate construction	41	0.21	32	0.16	36	0.17	36	0.16
Lease financing	95	0.48	72	0.37	63	0.33	76	0.40
Total commercial	2,254	0.44	2,312	0.45	2,470	0.48	2,797	0.55
Consumer:								
Real estate 1-4 family first mortgage (1)	2,150	0.73	2,261	0.78	2,425	0.85	3,026	1.06
Real estate 1-4 family junior lien mortgage (1)	796	2.70	819	2.66	868	2.71	916	2.77
Automobile	106	0.22	110	0.24	115	0.25	116	0.26
Other revolving credit and installment	40	0.12	43	0.12	44	0.13	50	0.14
Total consumer	3,092	0.69	3,233	0.73	3,452	0.79	4,108	0.94
Total nonaccrual loans (2)	5,346	0.56	5,545	0.58	5,922	0.62	6,905	0.73
Foreclosed assets:								
Government insured/guaranteed (3)	50		59		68		75	
Non-government insured/guaranteed	253		378		309		361	
Total foreclosed assets	303		437		377		436	
Total nonperforming assets	\$ 5,649	0.59%	\$ 5,982	0.63%	\$ 6,299	0.66%	\$ 7,341	0.77%
Change in NPAs from prior quarter	\$ (333)		(317)		(1,042)		394	

(1) Real estate 1-4 family mortgage loans predominantly insured by the FHA or guaranteed by the VA are not placed on nonaccrual status because they are insured or guaranteed.

(2) Excludes PCI loans because they continue to earn interest income from accretible yield, independent of performance in accordance with their contractual terms.

(3) Consistent with regulatory reporting requirements, foreclosed real estate resulting from government insured/guaranteed loans are classified as nonperforming. Both principal and interest related to these foreclosed real estate assets are collectible because the loans were predominantly insured by the FHA or guaranteed by the VA. Receivables related to the foreclosure of certain government guaranteed real estate mortgage loans are excluded from this table and included in Accounts Receivable in Other Assets. For more information on the classification of certain government-guaranteed residential mortgage loans upon foreclosure, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Table 29 provides an analysis of the changes in nonaccrual loans.

Table 29: Analysis of Changes in Nonaccrual Loans

(in millions)	Quarter ended				Year ended Dec 31,	
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	2019	2018
Commercial nonaccrual loans						
Balance, beginning of period	\$ 2,312	2,470	2,797	2,188	2,188	2,640
Inflows	652	710	621	1,238	3,221	2,767
Outflows:						
Returned to accruing	(124)	(52)	(46)	(43)	(265)	(323)
Foreclosures	—	(78)	(2)	(15)	(95)	(12)
Charge-offs	(201)	(194)	(187)	(158)	(740)	(636)
Payments, sales and other	(385)	(544)	(713)	(413)	(2,055)	(2,248)
Total outflows	(710)	(868)	(948)	(629)	(3,155)	(3,219)
Balance, end of period	2,254	2,312	2,470	2,797	2,254	2,188
Consumer nonaccrual loans						
Balance, beginning of period	3,233	3,452	4,108	4,308	4,308	5,006
Inflows	473	448	437	552	1,910	2,433
Outflows:						
Returned to accruing	(227)	(274)	(250)	(248)	(999)	(1,304)
Foreclosures	(29)	(32)	(34)	(42)	(137)	(166)
Charge-offs	(45)	(44)	(34)	(49)	(172)	(292)
Payments, sales and other	(313)	(317)	(775)	(413)	(1,818)	(1,369)
Total outflows	(614)	(667)	(1,093)	(752)	(3,126)	(3,131)
Balance, end of period	3,092	3,233	3,452	4,108	3,092	4,308
Total nonaccrual loans	\$ 5,346	5,545	5,922	6,905	5,346	6,496

Typically, changes to nonaccrual loans period-over-period represent inflows for loans that are placed on nonaccrual status in accordance with our policy, offset by reductions for loans that are paid down, charged off, sold, foreclosed, or are no longer classified as nonaccrual as a result of continued performance and an improvement in the borrower's financial condition and loan repayment capabilities.

While nonaccrual loans are not free of loss content, we believe exposure to loss is significantly mitigated by the following factors at December 31, 2019:

- 86% of total commercial nonaccrual loans and 99% of total consumer nonaccrual loans are secured. Of the consumer nonaccrual loans, 95% are secured by real estate and 88% have a combined LTV (CLTV) ratio of 80% or less.
- losses of \$360 million and \$941 million have already been recognized on 19% of commercial nonaccrual loans and 35% of consumer nonaccrual loans, respectively, in accordance with our charge-off policies. Once we write down loans to the net realizable value (fair value of collateral less estimated costs to sell), we re-evaluate each loan regularly and record additional write-downs if needed.
- 71% of commercial nonaccrual loans were current on interest and 66% of commercial nonaccrual loans were current on both principal and interest. These commercial loans were on nonaccrual status because the full or timely collection of interest or principal had become uncertain.

- of the \$1.3 billion of consumer loans in bankruptcy or discharged in bankruptcy, and classified as nonaccrual, \$916 million were current.
- the remaining risk of loss of all nonaccrual loans has been considered and we believe is adequately covered by the allowance for loan losses.

We continue to work with our customers experiencing financial difficulty to determine if they can qualify for a loan modification so that they can stay in their homes. Under our proprietary modification programs, customers may be required to provide updated documentation, and some programs require completion of payment during trial periods to demonstrate sustained performance before the loan can be removed from nonaccrual status.

If interest due on all nonaccrual loans (including loans that were, but are no longer on nonaccrual status at year end) had been accrued under the original terms, approximately \$361 million of interest would have been recorded as income on these loans, compared with \$316 million actually recorded as interest income in 2019, versus \$446 million and \$426 million, respectively, in 2018.

Risk Management – Credit Risk Management (continued)

Table 30 provides a summary of foreclosed assets and an analysis of changes in foreclosed assets.

Table 30: Foreclosed Assets

(in millions)	Quarter ended				Year ended Dec 31,	
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	2019	2018
Summary by loan segment						
Government insured/guaranteed	\$ 50	59	68	75	50	88
Commercial	62	180	101	124	62	127
Consumer	191	198	208	237	191	236
Total foreclosed assets	303	437	377	436	303	451
Analysis of changes in foreclosed assets						
Balance, beginning of period	\$ 437	377	436	451	451	642
Net change in government insured/guaranteed (1)	(9)	(9)	(7)	(13)	(38)	(32)
Additions to foreclosed assets (2)	126	235	144	193	698	778
Reductions:						
Sales	(250)	(155)	(199)	(205)	(809)	(957)
Write-downs and gains (losses) on sales	(1)	(11)	3	10	1	20
Total reductions	(251)	(166)	(196)	(195)	(808)	(937)
Balance, end of period	\$ 303	437	377	436	303	451

(1) Foreclosed government insured/guaranteed loans are temporarily transferred to and held by us as servicer, until reimbursement is received from FHA or VA.

(2) Includes loans moved into foreclosed assets from nonaccrual status, PCI loans transitioned directly to foreclosed assets and repossessed automobiles.

Foreclosed assets at December 31, 2019, included \$222 million of foreclosed residential real estate, of which 23% is predominantly FHA insured or VA guaranteed and expected to have minimal or no loss content. The remaining amount of foreclosed assets has been written down to estimated net realizable value. Of the \$303 million in foreclosed assets at December 31, 2019, 69% have been in the foreclosed assets portfolio one year or less.

TROUBLED DEBT RESTRUCTURINGS (TDRs)

Table 31: Troubled Debt Restructurings (TDRs)

(in millions)	December 31,				
	2019	2018	2017	2016	2015
Commercial:					
Commercial and industrial	\$ 1,183	1,623	2,096	2,584	1,123
Real estate mortgage	669	704	901	1,119	1,456
Real estate construction	36	39	44	91	125
Lease financing	13	56	35	6	1
Total commercial TDRs	1,901	2,422	3,076	3,800	2,705
Consumer:					
Real estate 1-4 family first mortgage	7,589	10,629	12,080	14,134	16,812
Real estate 1-4 family junior lien mortgage	1,407	1,639	1,849	2,074	2,306
Credit card	520	449	356	300	299
Automobile	81	89	87	85	105
Other revolving credit and installment	170	154	126	101	73
Trial modifications	115	149	194	299	402
Total consumer TDRs	9,882	13,109	14,692	16,993	19,997
Total TDRs	\$ 11,783	15,531	17,768	20,793	22,702
TDRs on nonaccrual status	\$ 2,833	4,058	4,801	6,193	6,506
TDRs on accrual status:					
Government insured/guaranteed	1,190	1,299	1,359	1,526	1,771
Non-government insured/guaranteed	7,760	10,174	11,608	13,074	14,425
Total TDRs	\$ 11,783	15,531	17,768	20,793	22,702

Table 32: TDRs Balance by Quarter During 2019

(in millions)	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019
Commercial:				
Commercial and industrial	\$ 1,183	1,162	1,294	1,740
Real estate mortgage	669	598	620	681
Real estate construction	36	40	43	45
Lease financing	13	16	31	46
Total commercial TDRs	1,901	1,816	1,988	2,512
Consumer:				
Real estate 1-4 family first mortgage	7,589	7,905	8,218	10,343
Real estate 1-4 family junior lien mortgage	1,407	1,457	1,550	1,604
Credit card	520	504	486	473
Automobile	81	82	85	85
Other revolving credit and installment	170	167	159	156
Trial modifications	115	123	127	136
Total consumer TDRs	9,882	10,238	10,625	12,797
Total TDRs	\$ 11,783	12,054	12,613	15,309
TDRs on nonaccrual status	\$ 2,833	2,775	3,058	4,037
TDRs on accrual status:				
Government insured/guaranteed	1,190	1,199	1,209	1,275
Non-government insured/guaranteed	7,760	8,080	8,346	9,997
Total TDRs	\$ 11,783	12,054	12,613	15,309

Table 31 and Table 32 provide information regarding the recorded investment of loans modified in TDRs. The allowance for loan losses for TDRs was \$1.0 billion and \$1.2 billion at December 31, 2019 and 2018, respectively. See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for additional information regarding TDRs. In those situations where principal is forgiven, the entire amount of such

forgiveness is immediately charged off. When we delay the timing on the repayment of a portion of principal (principal forbearance), we charge off the amount of forbearance if that amount is not considered fully collectible.

Our nonaccrual policies are generally the same for all loan types when a restructuring is involved. We typically

Risk Management – Credit Risk Management (continued)

re-underwrite loans at the time of restructuring to determine whether there is sufficient evidence of sustained repayment capacity based on the borrower's documented income, debt to income ratios, and other factors. Loans lacking sufficient evidence of sustained repayment capacity at the time of modification are charged down to the fair value of the collateral, if applicable. For an accruing loan that has been modified, if the borrower has demonstrated performance under the previous terms and the underwriting process shows the capacity to continue to perform under the restructured terms, the loan will generally remain in accruing status. Otherwise, the loan will be placed in nonaccrual status and may be returned to accruing status when the borrower demonstrates a sustained period of performance, generally six consecutive months of payments, or equivalent, inclusive of consecutive payments made prior to

modification. Loans will also be placed on nonaccrual status, and a corresponding charge-off is recorded to the loan balance, when we believe that principal and interest contractually due under the modified agreement will not be collectible.

Table 33 provides an analysis of the changes in TDRs. Loans modified more than once are reported as TDR inflows only in the period they are first modified. Other than resolutions such as foreclosures, sales and transfers to held for sale, we may remove loans held for investment from TDR classification, but only if they have been refinanced or restructured at market terms and qualify as a new loan.

TDRs of \$11.8 billion at December 31, 2019, decreased \$3.7 billion from December 31, 2018, due to paydowns, as well as a reclassification of \$1.7 billion in real estate 1-4 family first mortgage TDR loans to MLHFS.

Table 33: Analysis of Changes in TDRs

(in millions)	Quarter ended				Year ended Dec 31,	
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	2019	2018
Commercial TDRs						
Balance, beginning of period	\$ 1,816	1,988	2,512	2,422	2,422	3,076
Inflows (1)	476	293	232	539	1,540	1,764
Outflows						
Charge-offs	(48)	(66)	(37)	(44)	(195)	(284)
Foreclosure	(1)	—	—	—	(1)	(15)
Payments, sales and other (2)	(342)	(399)	(719)	(405)	(1,865)	(2,119)
Balance, end of period	1,901	1,816	1,988	2,512	1,901	2,422
Consumer TDRs						
Balance, beginning of period	10,238	10,625	12,797	13,109	13,109	14,692
Inflows (1)	350	360	336	439	1,485	1,747
Outflows						
Charge-offs	(57)	(56)	(61)	(60)	(234)	(223)
Foreclosure	(61)	(70)	(74)	(86)	(290)	(470)
Payments, sales and other (2)	(580)	(617)	(2,364)	(593)	(4,154)	(2,591)
Net change in trial modifications (3)	(8)	(4)	(9)	(12)	(34)	(46)
Balance, end of period	9,882	10,238	10,625	12,797	9,882	13,109
Total TDRs	\$ 11,783	12,054	12,613	15,309	11,783	15,531

- (1) Inflows include loans that modify, even if they resolve within the period, as well as gross advances on term loans that modified in a prior period and net advances on revolving TDRs that modified in a prior period.
- (2) Other outflows include normal amortization/accretion of loan basis adjustments and loans transferred to held for sale. Occasionally, loans that have been refinanced or restructured at market terms qualify as new loans, which are also included as other outflows.
- (3) Net change in trial modifications includes: inflows of new TDRs entering the trial payment period, net of outflows for modifications that either (i) successfully perform and enter into a permanent modification, or (ii) did not successfully perform according to the terms of the trial period plan and are subsequently charged-off, foreclosed upon or otherwise resolved.

LOANS 90 DAYS OR MORE PAST DUE AND STILL ACCRUING Loans 90 days or more past due are still accruing if they are (1) well-secured and in the process of collection or (2) real estate 1-4 family mortgage loans or consumer loans exempt under regulatory rules from being classified as nonaccrual until later delinquency, usually 120 days past due. PCI loans are not included in past due and still accruing loans even when they are 90 days or more contractually past due. These PCI loans are considered to be accruing because they continue to earn interest from accretable yield, independent of performance in accordance with their contractual terms.

Excluding insured/guaranteed loans, loans 90 days or more past due and still accruing at December 31, 2019, were down

\$46 million, or 5%, from December 31, 2018, due to payments, other loss mitigation activities, and credit stabilization.

Loans 90 days or more past due and still accruing whose repayments are predominantly insured by the FHA or guaranteed by the VA for mortgages were \$6.4 billion at December 31, 2019, down from \$7.7 billion at December 31, 2018, due to an improvement in delinquencies, as well as a reduction in the portfolio.

Table 34 reflects non-PCI loans 90 days or more past due and still accruing by class for loans not government insured/guaranteed. For additional information on delinquencies by loan class, see Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 34: Loans 90 Days or More Past Due and Still Accruing (1)

(in millions)	December 31,				
	2019	2018	2017	2016	2015
Total (excluding PCI (2)):	\$ 7,285	8,704	11,532	11,437	13,866
Less: FHA insured/VA guaranteed (3)	6,352	7,725	10,475	10,467	12,863
Less: Student loans guaranteed under the FFELP (4)	—	—	—	3	26
Total, not government insured/guaranteed	\$ 933	979	1,057	967	977
By segment and class, not government insured/guaranteed:					
Commercial:					
Commercial and industrial	\$ 47	43	26	28	97
Real estate mortgage	31	51	23	36	13
Real estate construction	—	—	—	—	4
Total commercial	78	94	49	64	114
Consumer:					
Real estate 1-4 family first mortgage	112	124	213	170	220
Real estate 1-4 family junior lien mortgage	32	32	60	56	65
Credit card	546	513	492	452	397
Automobile	78	114	143	112	79
Other revolving credit and installment	87	102	100	113	102
Total consumer	855	885	1,008	903	863
Total, not government insured/guaranteed	\$ 933	979	1,057	967	977

(1) Financial information for periods prior to December 31, 2018, has been revised to exclude MLHFS, LHFS and loans held at fair value, which reduced "Total, not government insured/guaranteed" by \$6 million, \$5 million and \$4 million at December 31, 2017, 2016 and 2015, respectively.

(2) PCI loans totaled \$102 million, \$370 million, \$1.4 billion, \$2.0 billion and \$2.9 billion at December 31, 2019, 2018, 2017, 2016 and 2015, respectively.

(3) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

(4) Represents loans whose repayments are largely guaranteed by agencies on behalf of the U.S. Department of Education under the Federal Family Education Loan Program (FFELP). All remaining student loans guaranteed under the FFELP were sold as of March 31, 2017.

Risk Management – Credit Risk Management (continued)

NET CHARGE-OFFS

Table 35: Net Charge-offs

(\$ in millions)	Year ended						Quarter ended			
	December 31,		December 31,		September 30,		June 30,		March 31,	
	Net loan charge-offs	% of avg. loans	Net loan charge-offs	% of avg. loans (1)	Net loan charge-offs	% of avg. loans (1)	Net loan charge-offs	% of avg. loans (1)	Net loan charge-offs	% of avg. loans (1)
2019										
Commercial:										
Commercial and industrial	\$ 607	0.17%	\$ 168	0.19%	\$ 147	0.17%	\$ 159	0.18%	\$ 133	0.15%
Real estate mortgage	6	—	4	0.01	(8)	(0.02)	4	0.01	6	0.02
Real estate construction	(12)	(0.06)	—	—	(8)	(0.14)	(2)	(0.04)	(2)	(0.04)
Lease financing	51	0.26	31	0.63	8	0.17	4	0.09	8	0.17
Total commercial	652	0.13	203	0.16	139	0.11	165	0.13	145	0.11
Consumer:										
Real estate 1-4 family first mortgage	(50)	(0.02)	(3)	—	(5)	(0.01)	(30)	(0.04)	(12)	(0.02)
Real estate 1-4 family junior lien mortgage	(66)	(0.21)	(16)	(0.20)	(22)	(0.28)	(19)	(0.24)	(9)	(0.10)
Credit card	1,370	3.53	350	3.48	319	3.22	349	3.68	352	3.73
Automobile	306	0.67	87	0.73	76	0.65	52	0.46	91	0.82
Other revolving credit and installment	550	1.59	148	1.71	138	1.60	136	1.56	128	1.47
Total consumer	2,110	0.48	566	0.51	506	0.46	488	0.45	550	0.51
Total	\$ 2,762	0.29%	\$ 769	0.32%	\$ 645	0.27%	\$ 653	0.28%	\$ 695	0.30%
2018										
Commercial:										
Commercial and industrial	\$ 423	0.13%	\$ 132	0.15%	\$ 148	0.18%	\$ 58	0.07%	\$ 85	0.10%
Real estate mortgage	(28)	(0.02)	(12)	(0.04)	(1)	—	—	—	(15)	(0.05)
Real estate construction	(13)	(0.05)	(1)	(0.01)	(2)	(0.04)	(6)	(0.09)	(4)	(0.07)
Lease financing	47	0.24	13	0.26	7	0.14	15	0.32	12	0.25
Total commercial	429	0.09	132	0.10	152	0.12	67	0.05	78	0.06
Consumer:										
Real estate 1-4 family first mortgage	(88)	(0.03)	(22)	(0.03)	(25)	(0.04)	(23)	(0.03)	(18)	(0.03)
Real estate 1-4 family junior lien mortgage	(40)	(0.11)	(10)	(0.11)	(9)	(0.10)	(13)	(0.13)	(8)	(0.09)
Credit card	1,292	3.51	338	3.54	299	3.22	323	3.61	332	3.69
Automobile	584	1.21	133	1.16	130	1.10	113	0.93	208	1.64
Other revolving credit and installment	567	1.53	150	1.64	133	1.44	135	1.44	149	1.60
Total consumer	2,315	0.52	589	0.53	528	0.47	535	0.49	663	0.60
Total	\$ 2,744	0.29%	\$ 721	0.30%	\$ 680	0.29%	\$ 602	0.26%	\$ 741	0.32%

(1) Quarterly net charge-offs (recoveries) as a percentage of average respective loans are annualized.

Table 35 presents net charge-offs for the four quarters and full year of 2019 and 2018. Net charge-offs in 2019 were \$2.8 billion (0.29% of average total loans outstanding), compared with \$2.7 billion (0.29%) in 2018.

The increase in commercial and industrial net charge-offs in 2019 was driven by lower recoveries, and higher losses in our oil and gas portfolio. The decrease in consumer net charge-offs in 2019 was driven by lower losses, predominantly in the automobile portfolio, partially offset by a slight increase in losses in the credit card portfolio.

ALLOWANCE FOR CREDIT LOSSES The allowance for credit losses, which consists of the allowance for loan losses and the allowance for unfunded credit commitments, is management's estimate of credit losses inherent in the loan portfolio and unfunded credit commitments at the balance sheet date, excluding loans carried at fair value. The detail of the changes in the allowance for credit losses by portfolio segment (including charge-offs and recoveries by loan class) is in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

We apply a disciplined process and methodology to establish our allowance for credit losses each quarter. This process takes into consideration many factors, including historical and forecasted loss trends, loan-level credit quality ratings and loan

grade-specific characteristics. The process involves subjective and complex judgments. In addition, we review a variety of credit metrics and trends. These credit metrics and trends, however, do not solely determine the amount of the allowance for credit losses as we use several analytical tools. Our estimation approach for the commercial portfolio reflects the estimated probability of default in accordance with the borrower's financial strength, and the severity of loss in the event of default, considering the quality of any underlying collateral. Probability of default and severity at the time of default are statistically derived through historical observations of defaults and losses after default within each credit risk rating. Our estimation approach for the consumer portfolio uses forecasted losses that represent our best estimate of inherent loss based on historical experience, quantitative and other mathematical techniques. For additional information on our allowance for credit losses, see the "Critical Accounting Policies – Allowance for Credit Losses" section and Note 1 (Summary of Significant Accounting Policies) and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 36 presents the allocation of the allowance for credit losses by loan segment and class for the last five years.

Table 36: Allocation of the Allowance for Credit Losses (ACL)

(in millions)	Dec 31, 2019		Dec 31, 2018		Dec 31, 2017		Dec 31, 2016		Dec 31, 2015	
	ACL	Loans as % of total loans	ACL	Loans as % of total loans	ACL	Loans as % of total loans	ACL	Loans as % of total loans	ACL	Loans as % of total loans
Commercial:										
Commercial and industrial	\$ 3,600	37%	\$ 3,628	37%	\$ 3,752	35%	\$ 4,560	34%	\$ 4,231	33%
Real estate mortgage	1,236	13	1,282	13	1,374	13	1,320	14	1,264	13
Real estate construction	1,079	2	1,200	2	1,238	3	1,294	2	1,210	3
Lease financing	330	2	307	2	268	2	220	2	167	1
Total commercial	6,245	54	6,417	54	6,632	53	7,394	52	6,872	50
Consumer:										
Real estate 1-4 family first mortgage	692	30	750	30	1,085	30	1,270	29	1,895	30
Real estate 1-4 family junior lien mortgage	247	3	431	3	608	4	815	5	1,223	6
Credit card	2,252	4	2,064	4	1,944	4	1,605	4	1,412	4
Automobile	459	5	475	5	1,039	5	817	6	529	6
Other revolving credit and installment	561	4	570	4	652	4	639	4	581	4
Total consumer	4,211	46	4,290	46	5,328	47	5,146	48	5,640	50
Total	\$ 10,456	100%	\$ 10,707	100%	\$ 11,960	100%	\$ 12,540	100%	\$ 12,512	100%

	Dec 31, 2019	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016	Dec 31, 2015
Components:					
Allowance for loan losses	\$ 9,551	9,775	11,004	11,419	11,545
Allowance for unfunded credit commitments	905	932	956	1,121	967
Allowance for credit losses	\$ 10,456	10,707	11,960	12,540	12,512
Allowance for loan losses as a percentage of total loans	0.99%	1.03	1.15	1.18	1.26
Allowance for loan losses as a percentage of total net charge-offs	346	356	376	324	399
Allowance for credit losses as a percentage of total loans	1.09	1.12	1.25	1.30	1.37
Allowance for credit losses as a percentage of total nonaccrual loans	196	165	156	126	115

In addition to the allowance for credit losses, there was \$387 million at December 31, 2019, and \$480 million at December 31, 2018, of nonaccretable difference to absorb losses on PCI loans of \$568 million at December 31, 2019, and \$5.0 billion at December 31, 2018. The allowance for credit losses is lower than otherwise would have been required without PCI loan accounting. As a result of PCI loans, certain ratios of the Company may not be directly comparable with credit-related metrics for other financial institutions. For additional information on PCI loans, see the "Risk Management – Credit Risk Management – Purchased Credit-Impaired Loans" section, Note 1 (Summary of Significant Accounting Policies) and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

The ratio of the allowance for credit losses to total nonaccrual loans may fluctuate significantly from period to period due to such factors as the mix of loan types in the portfolio, borrower credit strength and the value and marketability of collateral.

The allowance for credit losses decreased \$251 million, or 2%, in 2019, due to improvement in the credit quality of our commercial and residential real estate portfolios, partially offset by an increase in the allowance for the credit card portfolio reflecting increased volume and a shift in portfolio mix. Total

provision for credit losses was \$2.7 billion in 2019 and \$1.7 billion in 2018. The provision for credit losses was \$75 million less than net charge-offs in 2019, reflecting the same changes mentioned above for the allowance for credit losses, compared with \$1.0 billion less than net charge-offs in 2018. For a discussion of our 2018 provision for credit losses compared with 2017, see the "Risk Management – Credit Risk Management – Allowance for Credit Losses" section of our Annual Report on Form 10-K for the year ended December 31, 2018.

We believe the allowance for credit losses of \$10.5 billion at December 31, 2019, was appropriate to cover credit losses inherent in the loan portfolio, including unfunded credit commitments, at that date. The entire allowance for credit losses is available to absorb credit losses inherent in the total loan portfolio. The allowance for credit losses is subject to change and reflects existing factors as of the date of determination, including economic or market conditions and ongoing internal and external examination processes. Due to the sensitivity of the allowance for credit losses to changes in the economic and business environment, it is possible that we will incur incremental credit losses not anticipated as of the balance sheet date. Future amounts of the allowance for credit losses will be based on a variety of factors, including loan growth, portfolio performance

Risk Management – Credit Risk Management (continued)

and general economic conditions. Our process for determining the allowance for credit losses is discussed in the “Critical Accounting Policies – Allowance for Credit Losses” section and Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

LIABILITY FOR MORTGAGE LOAN REPURCHASE LOSSES We sell residential mortgage loans to various parties, including (1) government-sponsored entities (GSEs) Federal Home Loan Mortgage Corporation (FHLMC) and Federal National Mortgage Association (FNMA) who include the mortgage loans in GSE-guaranteed mortgage securitizations, (2) SPEs that issue private label MBS, and (3) other financial institutions that purchase mortgage loans for investment or private label securitization. In addition, we pool FHA-insured and VA-guaranteed mortgage loans that are then used to back securities guaranteed by the Government National Mortgage Association (GNMA). We may be required to repurchase these mortgage loans, indemnify the securitization trust, investor or insurer, or reimburse the securitization trust, investor or insurer for credit losses incurred on loans (collectively, repurchase) in the event of a breach of contractual representations or warranties that is not remedied within a period (usually 90 days or less) after we receive notice of the breach.

In connection with our sales and securitization of residential mortgage loans to various parties, we have established a mortgage repurchase liability, initially at fair value, related to various representations and warranties that reflect management’s estimate of losses for loans for which we could have a repurchase obligation, whether or not we currently service those loans, based on a combination of factors. Our mortgage repurchase liability estimation process also incorporates a forecast of repurchase demands associated with mortgage insurance rescission activity.

Customary with industry practice, we have the right of recourse against correspondent lenders from whom we have purchased loans with respect to representations and warranties. Historical recovery rates as well as projected lender performance are incorporated in the establishment of our mortgage repurchase liability.

We do not typically receive repurchase requests from GNMA, FHA and the Department of Housing and Urban Development (HUD) or VA. As an originator of an FHA-insured or VA-guaranteed loan, we are responsible for obtaining the insurance with the FHA or the guarantee with the VA. To the extent we are not able to obtain the insurance or the guarantee we must request permission to repurchase the loan from the GNMA pool. Such repurchases from GNMA pools typically represent a self-initiated process upon discovery of the uninsurable loan (usually within 180 days from funding of the loan). Alternatively, in lieu of repurchasing loans from GNMA pools, we may be asked by FHA/HUD or the VA to indemnify them (as applicable) for defects found in the Post Endorsement Technical Review process or audits performed by FHA/HUD or the VA. The Post Endorsement Technical Review is a process whereby HUD performs underwriting audits of closed/insured FHA loans for potential deficiencies. Our liability for mortgage loan repurchase losses incorporates probable losses associated with such indemnification.

RISKS RELATING TO SERVICING ACTIVITIES In addition to servicing loans in our portfolio, we act as servicer and/or master servicer of residential mortgage loans included in GSE-guaranteed mortgage securitizations, GNMA-guaranteed mortgage securitizations of FHA-insured/VA-guaranteed mortgages and

private label mortgage securitizations, as well as for unsecuritized loans owned by institutional investors. The following discussion summarizes the primary duties and requirements of servicing and related industry developments.

The loans we service were originated by us or by other mortgage loan originators. As servicer, our primary duties are typically to (1) collect payments due from borrowers, (2) advance certain delinquent payments of principal and interest on the mortgage loans, (3) maintain and administer any hazard, title or primary mortgage insurance policies relating to the mortgage loans, (4) maintain any required escrow accounts for payment of taxes and insurance and administer escrow payments, (5) foreclose on defaulted mortgage loans or, to the extent consistent with the related servicing agreement, consider alternatives to foreclosure, such as loan modifications or short sales, and (6) for loans sold into private label securitizations, manage the foreclosed property through liquidation. As master servicer, our primary duties are typically to (1) supervise, monitor and oversee the servicing of the mortgage loans by the servicer, (2) consult with each servicer and use reasonable efforts to cause the servicer to observe its servicing obligations, (3) prepare monthly distribution statements to security holders and, if required by the securitization documents, certain periodic reports required to be filed with the Securities and Exchange Commission (SEC), (4) if required by the securitization documents, calculate distributions and loss allocations on the mortgage-backed securities, (5) prepare tax and information returns of the securitization trust, and (6) advance amounts required by non-affiliated servicers who fail to perform their advancing obligations.

Each agreement under which we act as servicer or master servicer generally specifies a standard of responsibility for actions we take in such capacity and provides protection against expenses and liabilities we incur when acting in compliance with the specified standard. For example, private label securitization agreements under which we act as servicer or master servicer typically provide that the servicer and the master servicer are entitled to indemnification by the securitization trust for taking action or refraining from taking action in good faith or for errors in judgment. However, we are not indemnified, but rather are required to indemnify the securitization trustee, against any failure by us, as servicer or master servicer, to perform our servicing obligations or against any of our acts or omissions that involve willful misfeasance, bad faith or gross negligence in the performance of, or reckless disregard of, our duties. In addition, if we commit a material breach of our obligations as servicer or master servicer, we may be subject to termination if the breach is not cured within a specified period following notice, which can generally be given by the securitization trustee or a specified percentage of security holders. Whole loan sale contracts under which we act as servicer generally include similar provisions with respect to our actions as servicer. The standards governing servicing in GSE-guaranteed securitizations, and the possible remedies for violations of such standards, vary, and those standards and remedies are determined by servicing guides maintained by the GSEs, contracts between the GSEs and individual servicers and topical guides published by the GSEs from time to time. Such remedies could include indemnification or repurchase of an affected mortgage loan. In addition, in connection with our servicing activities, we could become subject to consent orders and settlement agreements with federal and state regulators for alleged servicing issues and practices. In general, these can require us to provide customers with loan modification relief, refinancing relief, and foreclosure prevention

and assistance, as well as can impose certain monetary penalties on us.

Asset/Liability Management

Asset/liability management involves evaluating, monitoring and managing interest rate risk, market risk, liquidity and funding. Primary oversight of interest rate risk and market risk resides with the Finance Committee of our Board, which oversees the administration and effectiveness of financial risk management policies and processes used to assess and manage these risks. Primary oversight of liquidity and funding resides with the Risk Committee of the Board. At the management level, we utilize a Corporate Asset/Liability Committee (Corporate ALCO), which consists of management from finance, risk and business groups, to oversee these risks and provide periodic reports to the Board's Finance Committee and Risk Committee as appropriate. As discussed in more detail for market risk activities below, we employ separate management level oversight specific to market risk.

INTEREST RATE RISK Interest rate risk, which potentially can have a significant earnings impact, is an integral part of being a financial intermediary. We are subject to interest rate risk because:

- assets and liabilities may mature or reprice at different times (for example, if assets reprice faster than liabilities and interest rates are generally rising, earnings will initially increase);
- assets and liabilities may reprice at the same time but by different amounts (for example, when the general level of interest rates is rising, we may increase rates paid on checking and savings deposit accounts by an amount that is less than the general rise in market interest rates);
- short-term and long-term market interest rates may change by different amounts (for example, the shape of the yield curve may affect new loan yields and funding costs differently);
- the remaining maturity of various assets or liabilities may shorten or lengthen as interest rates change (for example, if long-term mortgage interest rates increase sharply, MBS held in the debt securities portfolio may pay down slower than anticipated, which could impact portfolio income); or
- interest rates may also have a direct or indirect effect on loan demand, collateral values, credit losses, mortgage origination volume, the fair value of MSR's and other financial instruments, the value of the pension liability and other items affecting earnings.

We assess interest rate risk by comparing outcomes under various net interest income simulations using many interest rate scenarios that differ in the direction of interest rate changes, the degree of change over time, the speed of change and the projected shape of the yield curve. These simulations require assumptions regarding drivers of earnings and balance sheet composition such as loan originations, prepayment speeds on loans and debt securities, deposit flows and mix, as well as pricing strategies.

Currently, our profile is such that we project net interest income will benefit modestly from higher interest rates as our assets would reprice faster and to a greater degree than our liabilities, while in the case of lower interest rates, our assets would reprice downward and to a greater degree than our liabilities.

Our most recent simulations estimate net interest income sensitivity over the next two years under a range of both lower

and higher interest rates. Measured impacts from standardized ramps (gradual changes) and shocks (instantaneous changes) are summarized in Table 37, indicating net interest income sensitivity relative to the Company's base net interest income plan. Ramp scenarios assume interest rates move gradually in parallel across the yield curve relative to the base scenario in year one, and the full amount of the ramp is held as a constant differential to the base scenario in year two. The following describes the simulation assumptions for the scenarios presented in Table 37:

- Simulations are dynamic and reflect anticipated growth across assets and liabilities.
- Other macroeconomic variables that could be correlated with the changes in interest rates are held constant.
- Mortgage prepayment and origination assumptions vary across scenarios and reflect only the impact of the higher or lower interest rates.
- Our base scenario deposit forecast incorporates mix changes consistent with the base interest rate trajectory. Deposit mix is modeled to be the same as in the base scenario across the alternative scenarios. In higher interest rate scenarios, customer activity that shifts balances into higher-yielding products could reduce expected net interest income.
- We hold the size of the projected debt and equity securities portfolios constant across scenarios.

Table 37: Net Interest Income Sensitivity Over Next Two-Year Horizon Relative to Base Expectation

(\$ in billions)	Base	Lower Rates		Higher Rates	
		100 bps Ramp Parallel Decrease	100 bps Instantaneous Parallel Increase	200 bps Ramp Parallel Increase	
First Year of Forecasting Horizon					
Net Interest Income Sensitivity to Base Scenario	\$	(1.8) - (1.3)	1.5 - 2.0	1.1 - 1.6	
<i>Key Rates at Horizon End</i>					
Fed Funds Target	1.87 %	0.87	2.87	3.87	
10-year CMT (1)	1.97	0.97	2.97	3.97	
Second Year of Forecasting Horizon					
Net Interest Income Sensitivity to Base Scenario	\$	(4.4) - (3.9)	2.0 - 2.5	2.7 - 3.2	
<i>Key Rates at Horizon End</i>					
Fed Funds Target	2.25 %	1.25	3.25	4.25	
10-year CMT (1)	2.36	1.36	3.36	4.36	

(1) U.S. Constant Maturity Treasury Rate

The sensitivity results above do not capture interest rate sensitive noninterest income and expense impacts. Our interest rate sensitive noninterest income and expense is predominantly driven by mortgage banking activities, and may move in the opposite direction of our net interest income. Mortgage originations generally decline in response to higher interest rates and generally increase, particularly refinancing activity, in response to lower interest rates. Mortgage results are also impacted by the valuation of MSR's and related hedge positions. See the "Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk" section in this Report for more information.

Interest rate sensitive noninterest income also results from changes in earnings credit for noninterest-bearing deposits that

Risk Management – Asset/Liability Management (continued)

reduce treasury management deposit service fees. Additionally, for the trading portfolio, our trading assets are (before the effects of certain economic hedges) generally less sensitive to changes in interest rates than the related funding liabilities. As a result, net interest income from the trading portfolio contracts and expands as interest rates rise and fall, respectively. The impact to net interest income does not include the fair value changes of trading securities and loans, which, along with the effects of related economic hedges, are recorded in noninterest income.

We use the debt securities portfolio and exchange-traded and over-the-counter (OTC) interest rate derivatives to hedge our interest rate exposures. See the “Balance Sheet Analysis – Available-for-Sale and Held-to-Maturity Debt Securities” section in this Report for more information on the use of the available-for-sale and held-to-maturity securities portfolios. The notional or contractual amount, credit risk amount and fair value of the derivatives used to hedge our interest rate risk exposures as of December 31, 2019, and December 31, 2018, are presented in Note 18 (Derivatives) to Financial Statements in this Report. We use derivatives for asset/liability management in two main ways:

- to convert the cash flows from selected asset and/or liability instruments/portfolios including investments, commercial loans and long-term debt, from fixed-rate payments to floating-rate payments, or vice versa; and
- to economically hedge our mortgage origination pipeline, funded mortgage loans and MSR using interest rate swaps, swaptions, futures, forwards and options.

MORTGAGE BANKING INTEREST RATE AND MARKET RISK We originate, fund and service mortgage loans, which subjects us to various risks, including credit, liquidity and interest rate risks. Based on market conditions and other factors, we reduce credit and liquidity risks by selling or securitizing a majority of the long-term fixed-rate mortgage and ARM loans we originate. On the other hand, we may hold originated ARMs and fixed-rate mortgage loans in our loan portfolio as an investment for our deposits. We determine whether the loans will be held for investment or held for sale at the time of commitment. We may subsequently change our intent to hold loans for investment and sell some or all of our ARMs or fixed-rate mortgages as part of our corporate asset/liability management. We may also acquire and add to our securities available for sale a portion of the securities issued at the time we securitize MLHFS.

Interest rate and market risk can be substantial in the mortgage business. Changes in interest rates may potentially reduce total origination and servicing fees, the value of our residential MSRs measured at fair value, the value of MLHFS and the associated income and loss reflected in mortgage banking noninterest income, the income and expense associated with instruments (economic hedges) used to hedge changes in the fair value of MSRs and MLHFS, and the value of derivative loan commitments (interest rate “locks”) extended to mortgage applicants.

Interest rates affect the amount and timing of origination and servicing fees because consumer demand for new mortgages and the level of refinancing activity are sensitive to changes in mortgage interest rates. Typically, a decline in mortgage interest rates will lead to an increase in mortgage originations and fees and may also lead to an increase in servicing fee income, depending on the level of new loans added to the servicing portfolio and prepayments. Given the time it takes for consumer behavior to fully react to interest rate changes, as well as the time required for processing a new application, providing the commitment, and securitizing and selling the loan, interest

rate changes will affect origination and servicing fees with a lag. The amount and timing of the impact on origination and servicing fees will depend on the magnitude, speed and duration of the change in interest rates.

We measure originations of MLHFS at fair value where an active secondary market and readily available market prices exist to reliably support fair value pricing models used for these loans. Loan origination fees on these loans are recorded when earned, and related direct loan origination costs are recognized when incurred. We also measure at fair value certain of our other interests held related to residential loan sales and securitizations. We believe fair value measurement for MLHFS and other interests held, which we hedge with free-standing derivatives (economic hedges) along with our MSRs measured at fair value, reduces certain timing differences and better matches changes in the value of these assets with changes in the value of derivatives used as economic hedges for these assets. During 2017, 2018, and 2019, in response to continued secondary market illiquidity, as well as our desire to retain high-quality loans on our balance sheet, we continued to originate certain prime non-agency loans to be substantially held for investment. We did however designate a small portion of our non-agency originations in 2018 and 2019 to MLHFS in support of future issuances of private label residential mortgage backed securities (RMBS). We issued \$2.4 billion and \$441 million of RMBS in 2019 and 2018, respectively.

We initially measure all of our MSRs at fair value and carry substantially all of them at fair value depending on our strategy for managing interest rate risk. Under this method, the MSRs are recorded at fair value at the time we sell or securitize the related mortgage loans. The carrying value of MSRs carried at fair value reflects changes in fair value at the end of each quarter and changes are included in net servicing income, a component of mortgage banking noninterest income. If the fair value of the MSRs increases, income is recognized; if the fair value of the MSRs decreases, a loss is recognized. We use a dynamic and sophisticated model to estimate the fair value of our MSRs and periodically benchmark our estimates to independent appraisals. The valuation of MSRs can be highly subjective and involve complex judgments by management about matters that are inherently unpredictable. See “Critical Accounting Policies – Valuation of Residential Mortgage Servicing Rights” section in this Report for additional information. Changes in interest rates influence a variety of significant assumptions included in the periodic valuation of MSRs, including prepayment speeds, expected returns and potential risks on the servicing asset portfolio, costs to service, the value of escrow balances and other servicing valuation elements. For key economic assumptions and the sensitivity of the fair value of MSRs, see Table 10.6 in Note 10 (Securitizations and Variable Interest Entities) to Financial Statements in this Report.

An increase in interest rates generally reduces the propensity for refinancing, extends the expected duration of the servicing portfolio and, therefore, increases the estimated fair value of the MSRs. However, an increase in interest rates can also reduce mortgage loan demand and, therefore, reduce origination income. A decline in interest rates generally increases the propensity for refinancing, reduces the expected duration of the servicing portfolio and therefore reduces the estimated fair value of MSRs. This reduction in fair value causes a charge to income for MSRs carried at fair value, net of any gains on free-standing derivatives (economic hedges) used to hedge MSRs. We may choose not to fully hedge the entire potential decline in the value of our MSRs resulting from a decline in interest rates because

the potential increase in origination/servicing fees in that scenario provides a partial “natural business hedge.”

The price risk associated with our MSR is economically hedged with a combination of highly liquid interest rate forward instruments including mortgage forward contracts, interest rate swaps and interest rate options. All of the instruments included in the hedge are marked to fair value daily. Because the hedging instruments are traded in predominantly highly liquid markets, their prices are readily observable and are fully reflected in each quarter’s mark to market. Quarterly MSR hedging results include a combination of directional gain or loss due to market changes as well as any carry income generated. If the economic hedge is effective, its overall directional hedge gain or loss will offset the change in the valuation of the underlying MSR asset. Gains or losses associated with these economic hedges are included in mortgage banking noninterest income. Consistent with our longstanding approach to hedging interest rate risk in the mortgage business, the size of the hedge and the particular combination of forward hedging instruments at any point in time is designed to reduce the volatility of the mortgage business’s earnings over various time frames within a range of mortgage interest rates. Because market factors, the composition of the mortgage servicing portfolio and the relationship between the origination and servicing sides of our mortgage business change continually, the types of instruments used in our hedging are reviewed daily and rebalanced based on our evaluation of current market factors and the interest rate risk inherent in our MSR portfolio. Throughout 2019, our economic hedging strategy primarily used forward mortgage purchase contracts that were effective at offsetting the impact of interest rates on the value of the MSR asset.

Mortgage forward contracts are designed to pass the full economics of the underlying reference mortgage securities to the holder of the contract, including both the directional gain and loss from the forward delivery of the reference securities and the corresponding carry income. Carry income represents the contract’s price accretion from the forward delivery price to the spot price including both the yield earned on the reference securities and the market implied cost of financing during the period. The actual amount of carry income earned on the hedge each quarter will depend on the amount of the underlying asset that is hedged and the particular instruments included in the hedge. The level of carry income is driven by the slope of the yield curve and other market driven supply and demand factors affecting the specific reference securities. A steep yield curve generally produces higher carry income while a flat or inverted yield curve can result in lower or potentially negative carry income. The level of carry income is also affected by the type of instrument used. In general, mortgage forward contracts tend to produce higher carry income than interest rate swap contracts. Carry income is recognized over the life of the mortgage forward as a component of the contract’s mark to market gain or loss.

Hedging the various sources of interest rate risk in mortgage banking is a complex process that requires sophisticated modeling and constant monitoring. While we attempt to balance these various aspects of the mortgage business, there are several potential risks to earnings:

- Valuation changes for MSRs associated with interest rate changes are recorded in earnings immediately within the accounting period in which those interest rate changes occur, whereas the impact of those same changes in interest rates on origination and servicing fees occur with a lag and over time. Thus, the mortgage business could be protected from adverse changes in interest rates over a period of time

on a cumulative basis but still display large variations in income from one accounting period to the next.

- The degree to which our net gains on loan originations offsets valuation changes for MSRs is imperfect, varies at different points in the interest rate cycle, and depends not just on the direction of interest rates but on the pattern of quarterly interest rate changes.
- Origination volumes, the valuation of MSRs and hedging results and associated costs are also affected by many factors. Such factors include the mix of new business between ARMs and fixed-rate mortgages, the relationship between short-term and long-term interest rates, the degree of volatility in interest rates, the relationship between mortgage interest rates and other interest rate markets, and other interest rate factors. Additional factors that can impact the valuation of the MSRs include changes in servicing and foreclosure costs due to changes in investor or regulatory guidelines, as well as individual state foreclosure legislation, and changes in discount rates due to market participants requiring a higher return due to updated market expectations on costs and risks associated with investing in MSRs. Many of these factors are hard to predict and we may not be able to directly or perfectly hedge their effect.
- While our hedging activities are designed to balance our mortgage banking interest rate risks, the financial instruments we use may not perfectly correlate with the values and income being hedged. For example, the change in the value of ARM production held for sale from changes in mortgage interest rates may or may not be fully offset by index-based financial instruments used as economic hedges for such ARMs. Hedge results may also be impacted as the overall level of hedges changes as interest rates change, or as there are other changes in the market for mortgage forwards that may affect the implied carry on the MSRs. For example, the hedge-carry income on our economic hedges for the MSRs did not continue at levels consistent with 2018 as the flat to inverted yield curve resulted in negative hedge carry in 2019.

The total carrying value of our residential and commercial MSRs was \$12.9 billion and \$16.1 billion at December 31, 2019 and 2018, respectively. The weighted-average note rate on our portfolio of loans serviced for others was 4.25% and 4.32% at December 31, 2019 and 2018, respectively. The carrying value of our total MSRs represented 0.79% and 0.94% of mortgage loans serviced for others at December 31, 2019 and 2018, respectively.

As part of our mortgage banking activities, we enter into commitments to fund residential mortgage loans at specified times in the future. A mortgage loan commitment can be either a floating rate commitment, where the interest rate is not yet determined, or it can be an interest rate lock that binds us to lend funds to a potential borrower at a specified interest rate and within a specified period of time, generally up to 60 days after inception of the rate lock. These loan commitments are derivative loan commitments if the loans that will result from the exercise of the commitments will be held for sale. These derivative loan commitments are recognized at fair value on the balance sheet with changes in their fair values recorded as part of mortgage banking noninterest income. The fair value of these commitments include, at inception and during the life of the loan commitment, the expected net future cash flows related to the associated servicing of the loan as part of the fair value measurement of derivative loan commitments. Changes

Risk Management – Asset/Liability Management (continued)

subsequent to inception are based on changes in fair value of the underlying loan resulting from the exercise of the commitment and changes in the probability that the loan will not fund within the terms of the commitment, referred to as a fall-out factor. The value of the underlying loan commitment is affected by changes in interest rates and the passage of time.

Outstanding derivative loan commitments (interest rate “locks”) expose us to the risk that the price of the mortgage loans underlying the commitments might decline due to increases in mortgage interest rates from inception of the rate lock to the funding of the loan. To minimize this risk, we employ mortgage forwards and options and Eurodollar futures and options contracts as economic hedges against the potential decreases in the values of the loans. We expect that these derivative financial instruments will experience changes in fair value that will either fully or partially offset the changes in fair value of the derivative loan commitments. However, changes in investor demand, such as concerns about credit risk, can also cause changes in the spread relationships between underlying loan value and the derivative financial instruments that cannot be hedged.

MARKET RISK Market risk is the risk of possible economic loss from adverse changes in market risk factors such as interest rates, credit spreads, foreign exchange rates, equity and commodity prices, and the risk of possible loss due to counterparty exposure. This applies to implied volatility risk, basis risk, and market liquidity risk. It also includes price risk in the trading book, mortgage servicing rights and the hedge effectiveness risk associated with the mortgage book, and impairment on private equity investments.

The Board’s Finance Committee has primary oversight responsibility for market risk and oversees the Company’s market risk exposure and market risk management strategies. In addition, the Board’s Risk Committee has certain oversight responsibilities with respect to market risk, including adjusting the Company’s market risk appetite with input from the Finance Committee. The Finance Committee also reports key market risk matters to the Risk Committee.

At the management level, the Market and Counterparty Risk Management function, which is part of IRM, has primary oversight responsibility for market risk. The Market and Counterparty Risk Management function reports into the CRO and also provides periodic reports related to market risk to the Board’s Finance Committee.

MARKET RISK – TRADING ACTIVITIES We engage in trading activities to accommodate the investment and risk management activities of our customers and to execute economic hedging to manage certain balance sheet risks. These trading activities predominantly occur within our Wholesale Banking businesses and to a lesser extent other divisions of the Company. Debt securities held for trading, equity securities held for trading, trading loans and trading derivatives are financial instruments used in our trading activities, and all are carried at fair value. Income earned on the financial instruments used in our trading activities include net interest income, changes in fair value and realized gains and losses. Net interest income earned from our trading activities is reflected in the interest income and interest expense components of our income statement. Changes in fair value of the financial instruments used in our trading activities are reflected in net gains on trading activities, a component of noninterest income in our income statement. For more information on the financial instruments used in our trading activities and the income from these trading activities, see Note 4 (Trading Activities) to Financial Statements in this Report.

Value-at-risk (VaR) is a statistical risk measure used to estimate the potential loss from adverse moves in the financial markets. The Company uses VaR metrics complemented with sensitivity analysis and stress testing in measuring and monitoring market risk. These market risk measures are monitored at both the business unit level and at aggregated levels on a daily basis. Our corporate market risk management function aggregates and monitors all exposures to ensure risk measures are within our established risk appetite. Changes to the market risk profile are analyzed and reported on a daily basis. The Company monitors various market risk exposure measures from a variety of perspectives, including line of business, product, risk type, and legal entity.

Trading VaR is the measure used to provide insight into the market risk exhibited by the Company’s trading positions. The Company calculates Trading VaR for risk management purposes to establish line of business and Company-wide risk limits. Trading VaR is calculated based on all trading positions on our balance sheet.

Table 38 shows the Company's Trading General VaR by risk category. Our Trading General VaR uses a historical simulation model which assumes that historical changes in market values are representative of the potential future outcomes and measures the expected earnings loss of the Company over a 1-day time interval at a 99% confidence level. Our historical simulation model is based on equally weighted data from a 12-month historical look-back period. We believe using a 12-month look-back period helps ensure the Company's VaR is

responsive to current market conditions. The 99% confidence level equates to an expectation that the Company would incur single-day trading losses in excess of the VaR estimate on average once every 100 trading days.

Average Company Trading General VaR was \$22 million for the year ended December 31, 2019, compared with \$15 million for the year ended December 31, 2018. The increase in average Company Trading General VaR for the year ended December 31, 2019, was mainly driven by changes in portfolio composition.

Table 38: Trading 1-Day 99% General VaR by Risk Category

(in millions)	Year ended							
	December 31, 2019				December 31, 2018			
	Period end	Average	Low	High	Period end	Average	Low	High
Company Trading General VaR Risk Categories								
Credit	\$ 15	17	11	30	18	16	10	55
Interest rate	14	27	9	49	28	17	6	52
Equity	5	5	4	11	5	8	2	16
Commodity	2	2	1	6	2	1	1	4
Foreign exchange	1	1	1	1	1	1	0	3
Diversification benefit (1)	(13)	(30)			(33)	(28)		
Company Trading General VaR	\$ 24	22			21	15		

(1) The period-end VaR was less than the sum of the VaR components described above, which is due to portfolio diversification. The diversification effect arises because the risks are not perfectly correlated causing a portfolio of positions to usually be less risky than the sum of the risks of the positions alone. The diversification benefit is not meaningful for low and high metrics since they may occur on different days.

Sensitivity Analysis Given the inherent limitations of the VaR models, the Company uses other measures, including sensitivity analysis, to measure and monitor risk. Sensitivity analysis is the measure of exposure to a single risk factor, such as a 0.01% increase in interest rates or a 1% increase in equity prices. We conduct and monitor sensitivity on interest rates, credit spreads, volatility, equity, commodity, and foreign exchange exposure. Sensitivity analysis complements VaR as it provides an indication of risk relative to each factor irrespective of historical market moves.

Stress Testing While VaR captures the risk of loss due to adverse changes in markets using recent historical market data, stress testing is designed to capture the Company's exposure to extreme but low probability market movements. Stress scenarios estimate the risk of losses based on management's assumptions of abnormal but severe market movements such as severe credit spread widening or a large decline in equity prices. These scenarios assume that the market moves happen instantaneously and no repositioning or hedging activity takes place to mitigate losses as events unfold (a conservative approach since experience demonstrates otherwise).

An inventory of scenarios is maintained representing both historical and hypothetical stress events that affect a broad range of market risk factors with varying degrees of correlation and differing time horizons. Hypothetical scenarios assess the impact of large movements in financial variables on portfolio values. Typical examples include a 1% (100 basis point) increase across the yield curve or a 10% decline in equity market indexes. Historical scenarios utilize an event-driven approach: the stress scenarios are based on plausible but rare events, and the analysis addresses how these events might affect the risk factors relevant to a portfolio.

The Company's stress testing framework is also used in calculating results in support of the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) and internal

stress tests. Stress scenarios are regularly reviewed and updated to address potential market events or concerns. For more detail on the CCAR process, see the "Capital Management" section in this Report.

MARKET RISK – EQUITY SECURITIES We are directly and indirectly affected by changes in the equity markets. We make and manage direct investments in start-up businesses, emerging growth companies, management buy-outs, acquisitions and corporate recapitalizations. We also invest in non-affiliated funds that make similar private equity investments. These private equity investments are made within capital allocations approved by management and the Board. The Board's policy is to review business developments, key risks and historical returns for the private equity investment portfolio at least annually. Management reviews these investments at least quarterly and assesses them for possible OTTI and observable price changes. For nonmarketable equity securities, the analysis is based on facts and circumstances of each individual investment and the expectations for that investment's cash flows, capital needs, the viability of its business model, our exit strategy, and observable price changes that are similar to the investments held. Investments in nonmarketable equity securities include private equity investments accounted for under the equity method, fair value through net income, and the measurement alternative.

In conjunction with the March 2008 initial public offering (IPO) of Visa, Inc. (Visa), we received approximately 20.7 million shares of Visa Class B common stock, the class which was apportioned to member banks of Visa at the time of the IPO. To manage our exposure to Visa and realize the value of the appreciated Visa shares, we incrementally sold these shares through a series of sales, thereby eliminating this position as of September 30, 2015. As part of these sales, we agreed to compensate the buyer for any additional contributions to a litigation settlement fund for the litigation matters associated with the Class B shares we sold. Our exposure to this retained

Risk Management – Asset/Liability Management (continued)

litigation risk has been updated quarterly and is reflected on our balance sheet. For additional information about the associated litigation matters, see the “Interchange Litigation” section in Note 17 (Legal Actions) to Financial Statements in this Report.

As part of our business to support our customers, we trade public equities, listed/OTC equity derivatives and convertible bonds. We have parameters that govern these activities. We also have marketable equity securities that include investments relating to our venture capital activities. We manage these marketable equity securities within capital risk limits approved by management and the Board and monitored by Corporate ALCO and the Market Risk Committee. The fair value changes in these marketable equity securities are recognized in net income. For more information, see Note 8 (Equity Securities) to Financial Statements in this Report.

Changes in equity market prices may also indirectly affect our net income by (1) the value of third-party assets under management and, hence, fee income, (2) borrowers whose ability to repay principal and/or interest may be affected by the stock market, or (3) brokerage activity, related commission income and other business activities. Each business line monitors and manages these indirect risks.

LIQUIDITY AND FUNDING The objective of effective liquidity management is to ensure that we can meet customer loan requests, customer deposit maturities/withdrawals and other cash commitments efficiently under both normal operating conditions and under periods of Wells Fargo-specific and/or market stress. To achieve this objective, the Board establishes liquidity guidelines that require sufficient asset-based liquidity to cover potential funding requirements and to avoid over-dependence on volatile, less reliable funding markets. These guidelines are monitored on a monthly basis by the Corporate ALCO and on a quarterly basis by the Board. These guidelines are established and monitored for both the consolidated company and for the Parent on a stand-alone basis to ensure that the Parent is a source of strength for its regulated, deposit-taking banking subsidiaries.

Liquidity Standards We are subject to a rule, issued by the FRB, OCC and FDIC, that includes a quantitative liquidity requirement consistent with the liquidity coverage ratio (LCR) established by the Basel Committee on Banking Supervision (BCBS). The rule requires banking institutions, such as Wells Fargo, to hold high-quality liquid assets (HQLA), such as central bank reserves and government and corporate debt that can be converted easily and quickly into cash, in an amount equal to or greater than its projected net cash outflows during a 30-day stress period. The rule is applicable to the Company on a consolidated basis and to our insured depository institutions (IDIs) with total assets greater than \$10 billion. In addition, rules issued by the FRB

impose enhanced liquidity management standards on large bank holding companies (BHC) such as Wells Fargo.

The FRB, OCC and FDIC have proposed a rule that would implement a stable funding requirement, the net stable funding ratio (NSFR), which would require large banking organizations, such as Wells Fargo, to maintain a sufficient amount of stable funding in relation to their assets, derivative exposures and commitments over a one-year horizon period.

Liquidity Coverage Ratio As of December 31, 2019, the consolidated Company and Wells Fargo Bank, N.A., were above the minimum LCR requirement of 100%, which is calculated as HQLA divided by projected net cash outflows, as each is defined under the LCR rule. Table 39 presents the Company’s quarterly average values for the daily-calculated LCR and its components calculated pursuant to the LCR rule requirements.

Table 39: Liquidity Coverage Ratio

(in millions, except ratio)	Average for Quarter ended December 31, 2019
HQLA (1)(2)	\$ 373,362
Projected net cash outflows	312,019
LCR	120%

- (1) Excludes excess HQLA at Wells Fargo Bank, N.A.
(2) Net of applicable haircuts required under the LCR rule.

Liquidity Sources We maintain liquidity in the form of cash, cash equivalents and unencumbered high-quality, liquid debt securities. These assets make up our primary sources of liquidity which are presented in Table 40. Our primary sources of liquidity are substantially the same in composition as HQLA under the LCR rule; however, our primary sources of liquidity will generally exceed HQLA calculated under the LCR rule due to the applicable haircuts to HQLA and the exclusion of excess HQLA at our subsidiary IDIs required under the LCR rule.

Our cash is predominantly on deposit with the Federal Reserve. Debt securities included as part of our primary sources of liquidity are comprised of U.S. Treasury and federal agency debt, and mortgage-backed securities issued by federal agencies within our debt securities portfolio. We believe these debt securities provide quick sources of liquidity through sales or by pledging to obtain financing, regardless of market conditions. Some of these debt securities are within the held-to-maturity portion of our debt securities portfolio and as such are not intended for sale but may be pledged to obtain financing. Some of the legal entities within our consolidated group of companies are subject to various regulatory, tax, legal and other restrictions that can limit the transferability of their funds. We believe we maintain adequate liquidity for these entities in consideration of such funds transfer restrictions.

Table 40: Primary Sources of Liquidity

(in millions)	December 31, 2019			December 31, 2018		
	Total	Encumbered	Unencumbered	Total	Encumbered	Unencumbered
Interest-earning deposits with banks	\$ 119,493	—	119,493	149,736	—	149,736
Debt securities of U.S. Treasury and federal agencies	61,099	3,107	57,992	57,688	1,504	56,184
Mortgage-backed securities of federal agencies (1)	258,589	41,135	217,454	244,211	35,656	208,555
Total	\$ 439,181	44,242	394,939	451,635	37,160	414,475

- (1) Included in encumbered securities at December 31, 2019, were securities with a fair value of \$263 million which were purchased in December 2019, but settled in January 2020.

In addition to our primary sources of liquidity shown in Table 40, liquidity is also available through the sale or financing of other debt securities including trading and/or available-for-sale debt securities, as well as through the sale, securitization or financing of loans, to the extent such debt securities and loans are not encumbered. In addition, other debt securities in our held-to-maturity portfolio, to the extent not encumbered, may be pledged to obtain financing.

Deposits have historically provided a sizable source of relatively low-cost funds. Deposits were 137% of total loans at December 31, 2019, and 135% at December 31, 2018.

Additional funding is provided by long-term debt and short-term borrowings. Table 41 shows selected information for short-term borrowings, which generally mature in less than 30 days. For additional information, see Note 14 (Short-Term Borrowings) to Financial Statements in this Report.

Table 41: Short-Term Borrowings

(in millions)	Quarter ended				
	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019	Dec 31, 2018
Balance, period end					
Federal funds purchased and securities sold under agreements to repurchase	\$ 92,403	110,399	102,560	93,896	92,430
Other short-term borrowings	12,109	13,509	12,784	12,701	13,357
Total	\$ 104,512	123,908	115,344	106,597	105,787
Average daily balance for period					
Federal funds purchased and securities sold under agreements to repurchase	\$ 103,614	109,499	102,557	95,721	93,483
Other short-term borrowings	12,335	12,343	12,197	12,930	12,479
Total	\$ 115,949	121,842	114,754	108,651	105,962
Maximum month-end balance for period					
Federal funds purchased and securities sold under agreements to repurchase (1)	\$ 111,727	110,399	105,098	97,650	93,918
Other short-term borrowings (2)	12,708	13,509	12,784	14,129	13,357

(1) Highest month-end balance in each of the last five quarters was in October, September, May and January 2019, and November 2018.

(2) Highest month-end balance in each of the last five quarters was in October, September, June, and February 2019, and December 2018.

Long-Term Debt We access domestic and international capital markets for long-term funding (generally greater than one year) through issuances of registered debt securities, private placements and asset-backed secured funding. We issue long-term debt in a variety of maturities and currencies to achieve cost-efficient funding and to maintain an appropriate maturity profile. Proceeds from securities issued were used for general corporate purposes, and, unless otherwise specified in the applicable prospectus or prospectus supplement, we expect the proceeds from securities issued in the future will be used for the same purposes. Depending on market conditions, we may purchase our outstanding debt securities from time to time in privately negotiated or open market transactions, by tender offer, or otherwise. We issued \$53.4 billion of long-term debt in 2019 and \$9.7 billion in January and February of 2020. For additional information, see Note 15 (Long-Term Debt) to Financial Statements in this Report.

Credit Ratings Investors in the long-term capital markets, as well as other market participants, generally will consider, among other factors, a company's debt rating in making investment decisions. Rating agencies base their ratings on many quantitative and qualitative factors, including capital adequacy,

liquidity, asset quality, business mix, the level and quality of earnings, and rating agency assumptions regarding the probability and extent of federal financial assistance or support for certain large financial institutions. Adverse changes in these factors could result in a reduction of our credit rating; however, our debt securities do not contain credit rating covenants.

On October 21, 2019, DBRS Morningstar confirmed the Company's ratings and maintained the stable trend for all ratings. On December 16, 2019, Fitch Ratings, Inc., affirmed the Company's ratings and maintained the stable outlook for all ratings. Both the Parent and Wells Fargo Bank, N.A., remain among the highest-rated financial firms in the United States.

See the "Risk Factors" section in this Report for additional information regarding our credit ratings and the potential impact a credit rating downgrade would have on our liquidity and operations, as well as Note 18 (Derivatives) to Financial Statements in this Report for information regarding additional collateral and funding obligations required for certain derivative instruments in the event our credit ratings were to fall below investment grade.

The credit ratings of the Parent and Wells Fargo Bank, N.A., as of December 31, 2019, are presented in Table 42.

Table 42: Credit Ratings as of December 31, 2019

	Wells Fargo & Company		Wells Fargo Bank, N.A.	
	Senior debt	Short-term borrowings	Long-term deposits	Short-term borrowings
Moody's	A2	P-1	Aa1	P-1
S&P Global Ratings	A-	A-2	A+	A-1
Fitch Ratings, Inc.	A+	F1	AA	F1+
DBRS Morningstar	AA (low)	R-1 (middle)	AA	R-1 (high)

Risk Management – Asset/Liability Management (continued)

FEDERAL HOME LOAN BANK MEMBERSHIP The Federal Home Loan Banks (the FHLBs) are a group of cooperatives that lending institutions use to finance housing and economic development in local communities. We are a member of the FHLBs based in Dallas, Des Moines and San Francisco. Each member of the FHLBs is required to maintain a minimum investment in capital stock of the applicable FHLB. The board of directors of each FHLB can increase the minimum investment requirements in the event it has concluded that additional capital is required to allow it to meet its own regulatory capital requirements. Any increase in the minimum investment requirements outside of specified ranges requires the approval of the Federal Housing Finance Agency. Because the extent of any obligation to increase our investment in any of the FHLBs depends entirely upon the occurrence of a future event, potential future payments to the FHLBs are not determinable.

LIBOR TRANSITION Due to uncertainty surrounding the suitability and sustainability of the London Interbank Offered Rate (LIBOR), central banks and global regulators have called for financial market participants to prepare for the discontinuation of LIBOR by the end of 2021. LIBOR is a widely-referenced benchmark rate, which is published in five currencies and a range of tenors, and seeks to estimate the cost at which banks can borrow on an unsecured basis from other banks. We have a significant number of assets and liabilities referenced to LIBOR and other interbank offered rates (IBORs) such as commercial loans, adjustable-rate mortgage loans, derivatives, debt securities, and long-term debt. As of December 31, 2019, we had over \$500 billion of assets, consisting mostly of commercial loans, over \$80 billion of liabilities, and over \$400 billion of off-balance sheet commitments linked to IBORs. These amounts exclude derivative assets and liabilities on our consolidated balance sheet. As of December 31, 2019, the notional amount of our IBOR-linked interest rate derivative contracts was over \$10 trillion, of which over \$8 trillion related to contracts with central counterparty clearinghouses. Each of the IBOR-linked amounts referenced above will vary in future periods as current contracts expire with potential replacement contracts using either IBOR or an alternative reference rate. As of December 31, 2019, U.S. dollar LIBOR represented substantially all of the IBOR-linked amounts referenced above; however, we had exposure to all primary IBORs.

Accordingly, we established a LIBOR Transition Office (LTO) in February 2018, with senior management and Board oversight. The LTO is responsible for developing a coordinated strategy to transition the IBOR-linked contracts and processes across Wells Fargo to alternative reference rates and serves as primary conduit between Wells Fargo and relevant industry groups, such as the Alternative Reference Rates Committee (ARRC). Among other activities, the program structure created by the LTO is designed to (i) identify the types of exposures (e.g., products, systems, models) and risks associated with the transition, (ii) assess the provisions in our contracts that could apply in connection with the transition, (iii) incorporate more robust IBOR fallback language (contractual provisions that provide for transition to alternative reference rates upon defined trigger events) into new IBOR-linked product contracts, (iv) coordinate alternative reference rate product design, (v) appraise operational and infrastructure enhancements necessary to use alternative reference rates, (vi) facilitate systems and application revisions, including model development and validation, (vii) assess the funding issues, basis risk, and other finance, accounting, and tax impacts of transitioning away from IBORs, (viii) develop plans to minimize negative financial outcomes, (ix)

coordinate an enterprise-wide process for managing outreach and communications with our customers, and (x) implement a process to escalate key risks. When assessing risks associated with the transition away from IBORs, the LTO is reviewing both orderly and disorderly transition scenarios.

In an effort to mitigate the risks associated with a transition away from IBORs, the LTO is in the process of implementing the following initiatives: (i) compiling an enterprise contract inventory of IBOR-related terms, (ii) implementing more robust fallback language and disclosures related to LIBOR transition, (iii) developing a plan to amend legacy contracts to reference alternative reference rates, (iv) enhancing systems to support new fallback language and new products linked to alternative reference rates, (v) preparing internal and external communications regarding an IBOR transition, (vi) developing internal guidance focused on issues related to IBORs and alternative reference rate products, and (vii) evaluating policies and procedures in light of the transition away from LIBOR and other IBORs and the introduction of new products linked to alternative reference rates.

In addition, the Company is actively working with regulators, industry working groups (such as the ARRC) and trade associations that are developing guidance to facilitate an orderly transition away from the use of LIBOR. We continue to assess the risks and related impacts associated with a transition away from IBORs. See the “Risk Factors” section in this Report for additional information regarding the potential impact of a benchmark rate, such as LIBOR, or other referenced financial metric being significantly changed, replaced, or discontinued.

Although the Company did not issue any long-term debt with an interest rate indexed to the Secured Overnight Financing Rate (SOFR) in 2019, we did issue \$1.0 billion of long-term debt indexed to SOFR in 2018. SOFR is published by the Federal Reserve Bank of New York as an alternative to U.S. dollar LIBOR and is a broad measure of the cost of borrowing cash overnight collateralized by U.S. Treasury securities.

Capital Management

We have an active program for managing capital through a comprehensive process for assessing the Company's overall capital adequacy. Our objective is to maintain capital at an amount commensurate with our risk profile and risk tolerance objectives, and to meet both regulatory and market expectations. We primarily fund our working capital needs through the retention of earnings net of both dividends and share repurchases, as well as through the issuance of preferred stock and long and short-term debt. Retained earnings increased \$8.5 billion from December 31, 2018, predominantly from Wells Fargo net income of \$19.5 billion, less common and preferred stock dividends of \$9.9 billion. During 2019, we issued 48.8 million shares of common stock, excluding conversions of preferred shares. During 2019, we repurchased 502.4 million shares of common stock at a cost of \$24.5 billion. The amount of our repurchases are subject to various factors as discussed in the "Securities Repurchases" section below. For additional information about share repurchases, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

In third quarter 2019, we redeemed \$1.6 billion of our Preferred Stock, Series K. In January 2020, we issued \$2.0 billion of our Preferred Stock, Series Z. In February 2020, we announced a redemption of the remaining outstanding shares of our Preferred Stock, Series K, and a partial redemption of our Preferred Stock, Series T. For more information, see Note 20 (Preferred Stock) to Financial Statements in this Report.

Regulatory Capital Guidelines

The Company and each of our IDIs are subject to various regulatory capital adequacy requirements administered by the FRB and the OCC. Risk-based capital (RBC) guidelines establish a risk-adjusted ratio relating capital to different categories of assets and off-balance sheet exposures as discussed below.

RISK-BASED CAPITAL AND RISK-WEIGHTED ASSETS The Company is subject to rules issued by federal banking regulators to implement Basel III capital requirements for U.S. banking organizations. The federal banking regulators' capital rules, among other things, require on a fully phased-in basis:

- a minimum Common Equity Tier 1 (CET1) ratio of 9.00%, comprised of a 4.50% minimum requirement plus a capital conservation buffer of 2.50% and for us, as a global systemically important bank (G-SIB), a capital surcharge of 2.00%;
- a minimum tier 1 capital ratio of 10.50%, comprised of a 6.00% minimum requirement plus the capital conservation buffer of 2.50% and the G-SIB capital surcharge of 2.00%;
- a minimum total capital ratio of 12.50%, comprised of a 8.00% minimum requirement plus the capital conservation buffer of 2.50% and the G-SIB capital surcharge of 2.00%;
- a potential countercyclical buffer of up to 2.50% to be added to the minimum capital ratios, which could be imposed by regulators at their discretion if it is determined that a period of excessive credit growth is contributing to an increase in systemic risk; and
- a minimum tier 1 leverage ratio of 4.00%.

The Basel III capital requirements for calculating CET1 and tier 1 capital, along with risk-weighted assets (RWAs), are fully phased-in. However, the requirements for determining tier 2 and total capital are still in accordance with Transition Requirements and are scheduled to be fully phased-in by the end of 2021. The Basel III capital rules contain two frameworks for calculating capital requirements, a Standardized Approach and an Advanced Approach applicable to certain institutions, including Wells Fargo. Accordingly, in the assessment of our capital adequacy, we must report the lower of our CET1, tier 1 and total capital ratios calculated under the Standardized Approach and under the Advanced Approach.

On April 10, 2018, the FRB issued a proposed rule that would add a stress capital buffer and a stress leverage buffer to the minimum capital and tier 1 leverage ratio requirements. The buffers would be calculated based on the decrease in a financial institution's risk-based capital and tier 1 leverage ratios under the supervisory severely adverse scenario in CCAR, plus four quarters of planned common stock dividends. The stress capital buffer would replace the 2.50% capital conservation buffer under the Standardized Approach, whereas the stress leverage buffer would be added to the current 4.00% minimum tier 1 leverage ratio.

As a G-SIB, we are also subject to the FRB's rule implementing the additional capital surcharge of between 1.00-4.50% on the minimum capital requirements of G-SIBs. Under the rule, we must annually calculate our surcharge under two methods and use the higher of the two surcharges. The first method (method one) considers our size, interconnectedness, cross-jurisdictional activity, substitutability, and complexity, consistent with the methodology developed by the BCBS and the Financial Stability Board (FSB). The second (method two) uses similar inputs, but replaces substitutability with use of short-term wholesale funding and will generally result in higher surcharges than the BCBS methodology. Because the G-SIB capital surcharge is calculated annually based on data that can differ over time, the amount of the surcharge is subject to change in future years.

The tables that follow provide information about our risk-based capital and related ratios as calculated under Basel III capital guidelines. Although we continue to report certain capital amounts and ratios in accordance with Transition Requirements for banking industry regulatory reporting purposes, we are managing our capital on a fully phased-in basis. For information about our capital requirements calculated in accordance with Transition Requirements, see Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

Capital Management (continued)

Table 43 summarizes our CET1, tier 1 capital, total capital, RWAs and capital ratios on a fully phased-in basis at December 31, 2019 and 2018.

Table 43: Capital Components and Ratios (Fully Phased-In) (1)

(in millions, except ratios)		Required Minimum Capital Ratios	December 31, 2019		December 31, 2018	
			Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach
Common Equity Tier 1	(A)		\$ 138,760	138,760	146,363	146,363
Tier 1 Capital	(B)		158,949	158,949	167,866	167,866
Total Capital (2)	(C)		187,813	195,703	198,103	206,346
Risk-Weighted Assets	(D)		1,230,066	1,245,853	1,177,350	1,247,210
Common Equity Tier 1 Capital Ratio	(A)/(D)	9.00%	11.28	11.14 *	12.43	11.74 *
Tier 1 Capital Ratio	(B)/(D)	10.50	12.92	12.76 *	14.26	13.46 *
Total Capital Ratio (2)	(C)/(D)	12.50	15.27 *	15.71	16.83	16.54 *

* Denotes the lowest capital ratio as determined under the Advanced and Standardized Approaches.

(1) See Table 44 for information regarding the calculation and components of CET1, tier 1 capital, total capital and RWAs.

(2) The fully phased-in total capital amounts and ratios are considered non-GAAP financial measures that are used by management, bank regulatory agencies, investors and analysts to assess and monitor the Company's capital position. See Table 44 for information regarding the calculation and components of our fully phased-in total capital amounts, including a corresponding reconciliation to GAAP financial measures.

Table 44 provides information regarding the calculation and composition of our risk-based capital under the Advanced and Standardized Approaches at December 31, 2019 and December 31, 2018.

Table 44: Risk-Based Capital Calculation and Components

(in millions)	December 31, 2019		December 31, 2018	
	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach
Total equity	\$ 187,984	187,984	197,066	197,066
Adjustments:				
Preferred stock	(21,549)	(21,549)	(23,214)	(23,214)
Additional paid-in capital on ESOP preferred stock	(71)	(71)	(95)	(95)
Unearned ESOP shares	1,143	1,143	1,502	1,502
Noncontrolling interests	(838)	(838)	(900)	(900)
Total common stockholders' equity	166,669	166,669	174,359	174,359
Adjustments:				
Goodwill	(26,390)	(26,390)	(26,418)	(26,418)
Certain identifiable intangible assets (other than MSR's)	(437)	(437)	(559)	(559)
Goodwill and other intangibles on nonmarketable equity securities (included in other assets)	(2,146)	(2,146)	(2,187)	(2,187)
Applicable deferred taxes related to goodwill and other intangible assets (1)	810	810	785	785
Other	254	254	383	383
Common Equity Tier 1	138,760	138,760	146,363	146,363
Common Equity Tier 1	\$ 138,760	138,760	146,363	146,363
Preferred stock	21,549	21,549	23,214	23,214
Additional paid-in capital on ESOP preferred stock	71	71	95	95
Unearned ESOP shares	(1,143)	(1,143)	(1,502)	(1,502)
Other	(288)	(288)	(304)	(304)
Total Tier 1 capital (A)	158,949	158,949	167,866	167,866
Long-term debt and other instruments qualifying as Tier 2	26,515	26,515	27,946	27,946
Qualifying allowance for credit losses (2)	2,566	10,456	2,463	10,706
Other	(217)	(217)	(172)	(172)
Total Tier 2 capital (Fully Phased-In) (B)	28,864	36,754	30,237	38,480
Effect of Transition Requirements	520	520	695	695
Total Tier 2 capital (Transition Requirements)	\$ 29,384	37,274	30,932	39,175
Total qualifying capital (Fully Phased-In) (A)+(B)	\$ 187,813	195,703	198,103	206,346
Total Effect of Transition Requirements	520	520	695	695
Total qualifying capital (Transition Requirements)	\$ 188,333	196,223	198,798	207,041
Risk-Weighted Assets (RWAs) (3)(4):				
Credit risk	\$ 790,784	1,210,209	803,273	1,201,246
Market risk	35,644	35,644	45,964	45,964
Operational risk	403,638	—	328,113	—
Total RWAs	\$ 1,230,066	1,245,853	1,177,350	1,247,210

- Determined by applying the combined federal statutory rate and composite state income tax rates to the difference between book and tax basis of the respective goodwill and intangible assets at period end.
- Under the Advanced Approach, the allowance for credit losses that exceeds expected credit losses is eligible for inclusion in Tier 2 Capital, to the extent the excess allowance does not exceed 0.60% of Advanced credit RWAs, and under the Standardized Approach, the allowance for credit losses is includable in Tier 2 Capital up to 1.25% of Standardized credit RWAs, with any excess allowance for credit losses being deducted from total RWAs.
- RWAs calculated under the Advanced Approach utilize a risk-sensitive methodology, which relies upon the use of internal credit models based upon our experience with internal rating grades. Advanced Approach also includes an operational risk component, which reflects the risk of operating loss resulting from inadequate or failed internal processes or systems.
- Under the regulatory guidelines for risk-based capital, on-balance sheet assets and credit equivalent amounts of derivatives and off-balance sheet items are assigned to one of several broad risk categories according to the obligor, or, if relevant, the guarantor or the nature of any collateral. The aggregate dollar amount in each risk category is then multiplied by the risk weight associated with that category. The resulting weighted values from each of the risk categories are aggregated for determining total RWAs.

Capital Management (continued)

Table 45 presents the changes in Common Equity Tier 1 under the Advanced Approach for the year ended December 31, 2019.

Table 45: Analysis of Changes in Common Equity Tier 1 (Advanced Approach)

(in millions)	
Common Equity Tier 1 at December 31, 2018	\$ 146,363
Net income applicable to common stock	17,938
Common stock dividends	(8,444)
Common stock issued, repurchased, and stock compensation-related items	(21,719)
Changes in cumulative other comprehensive income	4,544
Cumulative effect from change in accounting policies (1)	(11)
Goodwill	27
Certain identifiable intangible assets (other than MSRs)	122
Goodwill and other intangibles on nonmarketable equity securities (included in other assets)	41
Applicable deferred taxes related to goodwill and other intangible assets (2)	26
Other	(127)
Change in Common Equity Tier 1	(7,603)
Common Equity Tier 1 at December 31, 2019	\$ 138,760

- (1) Effective January 1, 2019, we adopted Accounting Standards Update (ASU) 2016-02 – Leases (Topic 842) and subsequent related Updates, ASU 2017-08 – Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20): *Premium Amortization on Purchased Callable Debt Securities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (2) Determined by applying the combined federal statutory rate and composite state income tax rates to the difference between book and tax basis of the respective goodwill and intangible assets at period end.

Table 46 presents net changes in the components of RWAs under the Advanced and Standardized Approaches for the year ended December 31, 2019.

Table 46: Analysis of Changes in RWAs

(in millions)	Advanced Approach	Standardized Approach
RWAs at December 31, 2018	\$ 1,177,350	1,247,210
Net change in credit risk RWAs	(12,489)	8,963
Net change in market risk RWAs	(10,320)	(10,320)
Net change in operational risk RWAs	75,525	—
Total change in RWAs	52,716	(1,357)
RWAs at December 31, 2019	\$ 1,230,066	1,245,853

TANGIBLE COMMON EQUITY We also evaluate our business based on certain ratios that utilize tangible common equity. Tangible common equity is a non-GAAP financial measure and represents total equity less preferred equity, noncontrolling interests, goodwill, certain identifiable intangible assets (other than MSRs) and goodwill and other intangibles on nonmarketable equity securities, net of applicable deferred taxes. These tangible common equity ratios are as follows:

- Tangible book value per common share, which represents tangible common equity divided by common shares outstanding; and
- Return on average tangible common equity (ROTCE), which represents our annualized earnings contribution as a percentage of tangible common equity.

The methodology of determining tangible common equity may differ among companies. Management believes that tangible book value per common share and return on average tangible common equity, which utilize tangible common equity, are useful financial measures because they enable investors and others to assess the Company's use of equity.

Table 47 provides a reconciliation of these non-GAAP financial measures to GAAP financial measures.

Table 47: Tangible Common Equity

(in millions, except ratios)		Balance at period end			Average balance for the year ended		
		Dec 31, 2019	Dec 31, 2018	Dec 31, 2017	Dec 31, 2019	Dec 31, 2018	Dec 31, 2017
Total equity		\$ 187,984	197,066	208,079	197,621	203,356	205,654
Adjustments:							
Preferred stock		(21,549)	(23,214)	(25,358)	(22,522)	(24,956)	(25,592)
Additional paid-in capital on ESOP preferred stock		(71)	(95)	(122)	(81)	(125)	(139)
Unearned ESOP shares		1,143	1,502	1,678	1,306	2,159	2,143
Noncontrolling interests		(838)	(900)	(1,143)	(962)	(929)	(948)
Total common stockholders' equity	(A)	166,669	174,359	183,134	175,362	179,505	181,118
Adjustments:							
Goodwill		(26,390)	(26,418)	(26,587)	(26,409)	(26,453)	(26,629)
Certain identifiable intangible assets (other than MSRs)		(437)	(559)	(1,624)	(493)	(1,088)	(2,176)
Goodwill and other intangibles on nonmarketable equity securities (included in other assets)		(2,146)	(2,187)	(2,155)	(2,174)	(2,197)	(2,184)
Applicable deferred taxes related to goodwill and other intangible assets (1)		810	785	962	792	866	1,570
Tangible common equity	(B)	\$ 138,506	145,980	153,730	147,078	150,633	151,699
Common shares outstanding	(C)	4,134.4	4,581.3	4,891.6	N/A	N/A	N/A
Net income applicable to common stock	(D)	N/A	N/A	N/A	\$ 17,938	20,689	20,554
Book value per common share	(A)/(C)	\$ 40.31	38.06	37.44	N/A	N/A	N/A
Tangible book value per common share	(B)/(C)	33.50	31.86	31.43	N/A	N/A	N/A
Return on average common stockholders' equity (ROE)	(D)/(A)	N/A	N/A	N/A	10.23%	11.53	11.35
Return on average tangible common equity (ROTCE)	(D)/(B)	N/A	N/A	N/A	12.20	13.73	13.55

(1) Determined by applying the combined federal statutory rate and composite state income tax rates to the difference between book and tax basis of the respective goodwill and intangible assets at period end.

Capital Management (continued)

SUPPLEMENTARY LEVERAGE RATIO As a BHC, we are required to maintain a supplementary leverage ratio (SLR) of at least 5.00% (comprised of a 3.00% minimum requirement plus a supplementary leverage buffer of 2.00%) to avoid restrictions on capital distributions and discretionary bonus payments. Our IDIs are required to maintain a SLR of at least 6.00% to be considered well-capitalized under applicable regulatory capital adequacy guidelines. In April 2018, the FRB and OCC proposed rules (the “Proposed SLR Rules”) that would replace the 2.00% supplementary leverage buffer with a buffer equal to one-half of our G-SIB capital surcharge. The Proposed SLR Rules would similarly tailor the current 6.00% SLR requirement for our IDIs. At December 31, 2019, our SLR for the Company was 7.07%, and we also exceeded the applicable SLR requirements for each of our IDIs. See Table 48 for information regarding the calculation and components of the SLR.

Table 48: Supplementary Leverage Ratio

(in millions, except ratio)		Quarter ended December 31, 2019	
Tier 1 capital	(A)	\$	158,949
Total average assets			1,941,843
Less: Goodwill and other permitted Tier 1 capital deductions (net of deferred tax liabilities)			28,546
Total adjusted average assets			1,913,297
Plus adjustments for off-balance sheet exposures:			
Derivatives (1)			67,645
Repo-style transactions (2)			5,162
Other (3)			261,625
Total off-balance sheet exposures			334,432
Total leverage exposure	(B)	\$	2,247,729
Supplementary leverage ratio	(A)/(B)		7.07%

- (1) Adjustment represents derivatives and collateral netting exposures as defined for supplementary leverage ratio determination purposes.
- (2) Adjustment represents counterparty credit risk for repo-style transactions where Wells Fargo & Company is the principal (i.e., principal counterparty facing the client).
- (3) Adjustment represents credit equivalent amounts of other off-balance sheet exposures not already included as derivatives and repo-style transactions exposures.

OTHER REGULATORY CAPITAL MATTERS As a G-SIB, we are required to have a minimum amount of equity and unsecured long-term debt for purposes of resolvability and resiliency, often referred to as Total Loss Absorbing Capacity (TLAC). U.S. G-SIBs are required to have a minimum TLAC amount (consisting of CET1 capital and additional tier 1 capital issued directly by the top-tier or covered BHC plus eligible external long-term debt) equal to the greater of (i) 18.00% of RWAs and (ii) 7.50% of total leverage exposure (the denominator of the SLR calculation). Additionally, U.S. G-SIBs are required to maintain (i) a TLAC buffer equal to 2.50% of RWAs plus our applicable G-SIB capital surcharge calculated under method one plus any applicable countercyclical buffer to be added to the 18.00% minimum and (ii) an external TLAC leverage buffer equal to 2.00% of total leverage exposure to be added to the 7.50% minimum, in order to avoid restrictions on capital distributions and discretionary bonus payments. U.S. G-SIBs are also required to have a minimum amount of eligible unsecured long-term debt equal to the greater of (i) 6.00% of RWAs plus our applicable G-SIB capital surcharge calculated under method two and (ii) 4.50% of the total leverage exposure. Under the Proposed SLR Rules, the 2.00% external TLAC leverage buffer would be replaced with a buffer equal to one-half of our applicable G-SIB capital surcharge, and the leverage component for calculating the minimum amount of eligible unsecured long-term debt would be

modified from 4.50% of total leverage exposure to 2.50% of total leverage exposure plus one-half of our applicable G-SIB capital surcharge. As of December 31, 2019, our eligible external TLAC as a percentage of total risk-weighted assets was 23.28% compared with a required minimum of 22.00%. Similar to the risk-based capital requirements, we determine minimum required TLAC based on the greater of RWAs determined under the Standardized and Advanced approaches.

In addition, as discussed in the “Risk Management – Asset/Liability Management – Liquidity and Funding – Liquidity Standards” section in this Report, federal banking regulators have issued a final rule regarding the U.S. implementation of the Basel III LCR and a proposed rule regarding the NSFR.

Capital Planning and Stress Testing

Our planned long-term capital structure is designed to meet regulatory and market expectations. We believe that our long-term targeted capital structure enables us to invest in and grow our business, satisfy our customers’ financial needs in varying environments, access markets, and maintain flexibility to return capital to our shareholders. Our long-term targeted capital structure also considers capital levels sufficient to exceed capital requirements including the G-SIB capital surcharge. Accordingly, based on the final Basel III capital rules under the lower of the Standardized or Advanced Approaches CET1 capital ratios, we currently target a long-term CET1 capital ratio at or in excess of 10.00%, which includes a 2.00% G-SIB capital surcharge. Our capital targets are subject to change based on various factors, including changes to the regulatory capital framework and expectations for large banks promulgated by bank regulatory agencies, planned capital actions, changes in our risk profile and other factors. As discussed above in the “Capital Management – Regulatory Capital Guidelines – Risk-Based Capital and Risk-Weighted Assets” section of this Report, the FRB has proposed including a stress capital buffer to replace the current 2.50% capital conservation buffer. Under the proposal, it is expected that the adoption of current expected credit loss (CECL) accounting would be included in the calculation of the stress capital buffer. We expect that implementation of the stress capital buffer may increase the level and volatility of minimum capital ratio requirements, which may cause our current long-term CET1 capital ratio target of 10.00% to increase.

Under the FRB’s capital plan rule, large BHCs are required to submit capital plans annually for review to determine if the FRB has any objections before making any capital distributions. The rule requires updates to capital plans in the event of material changes in a BHC’s risk profile, including as a result of any significant acquisitions. The FRB assesses, among other things, the overall financial condition, risk profile, and capital adequacy of BHCs when evaluating capital plans.

Our 2019 capital plan, which was submitted on April 4, 2019, as part of CCAR, included a comprehensive capital outlook supported by an assessment of expected sources and uses of capital over a given planning horizon under a range of expected and stress scenarios. As part of the 2019 CCAR, the FRB also generated a supervisory stress test, which assumed a sharp decline in the economy and significant decline in asset pricing using the information provided by the Company to estimate performance. The FRB reviewed the supervisory stress results both as required under the Dodd-Frank Act using a common set of capital actions for all large BHCs and by taking into account the Company’s proposed capital actions. The FRB published its supervisory stress test results as required under the Dodd-Frank Act on June 21, 2019. On June 27, 2019, the FRB notified us that it did not object to our capital plan included in the 2019 CCAR.

Federal banking regulators require stress tests to evaluate whether an institution has sufficient capital to continue to operate during periods of adverse economic and financial conditions. These stress testing requirements set forth the timing and type of stress test activities large BHCs and banks must undertake as well as rules governing stress testing controls, oversight and disclosure requirements. The rules also limit a large BHC's ability to make capital distributions to the extent its actual capital issuances were less than amounts indicated in its capital plan. Under the FRB's stress testing rule, we were required to submit a mid-cycle stress test based on second quarter data and scenarios developed by the Company. We submitted the results of the mid-cycle stress test to the FRB and disclosed a summary of the results in October 2019. In October 2019, the FRB finalized rules that eliminate the mid-cycle stress test requirement for banks beginning in 2020.

Securities Repurchases

From time to time the Board authorizes the Company to repurchase shares of our common stock. Although we announce when the Board authorizes share repurchases, we typically do not give any public notice before we repurchase our shares. Future stock repurchases may be private or open-market repurchases, including block transactions, accelerated or delayed block transactions, forward repurchase transactions, and similar transactions. Additionally, we may enter into plans to purchase stock that satisfy the conditions of Rule 10b5-1 of the Securities Exchange Act of 1934. Various factors determine the amount of our share repurchases, including our capital requirements, the number of shares we expect to issue for employee benefit plans

and acquisitions, market conditions (including the trading price of our stock), and regulatory and legal considerations, including the FRB's response to our capital plan and to changes in our risk profile. Due to the various factors impacting the amount of our share repurchases and the fact that we tend to be in the market regularly to satisfy repurchase considerations under our capital plan, our share repurchases occur at various price levels. We may suspend share repurchase activity at any time.

In October 2018, the Board authorized the repurchase of 350 million shares of our common stock. In July 2019, the Board authorized the repurchase of an additional 350 million shares of our common stock. At December 31, 2019, we had remaining authority to repurchase approximately 243 million shares, subject to regulatory and legal conditions. For more information about share repurchases during fourth quarter 2019, see Part II, Item 5 in our 2019 Form 10-K.

Historically, our policy has been to repurchase shares under the "safe harbor" conditions of Rule 10b-18 of the Securities Exchange Act of 1934 including a limitation on the daily volume of repurchases. Rule 10b-18 imposes an additional daily volume limitation on share repurchases during a pending merger or acquisition in which shares of our stock will constitute some or all of the consideration. Our management may determine that during a pending stock merger or acquisition when the safe harbor would otherwise be available, it is in our best interest to repurchase shares in excess of this additional daily volume limitation. In such cases, we intend to repurchase shares in compliance with the other conditions of the safe harbor, including the standing daily volume limitation that applies whether or not there is a pending stock merger or acquisition.

Regulatory Matters

Since the enactment of the Dodd-Frank Act in 2010, the U.S. financial services industry has been subject to a significant increase in regulation and regulatory oversight initiatives. This increased regulation and oversight has substantially changed how most U.S. financial services companies conduct business and has increased their regulatory compliance costs. The following highlights the more significant regulations and regulatory oversight initiatives that have affected or may affect our business. For additional information about the regulatory matters discussed below and other regulations and regulatory oversight matters, see Part I, Item 1 "Regulation and Supervision" of our 2019 Form 10-K, and the "Capital Management," "Forward-Looking Statements" and "Risk Factors" sections and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

Dodd-Frank Act

The Dodd-Frank Act is the most significant financial reform legislation since the 1930s and is driving much of the current U.S. regulatory reform efforts. The following provides additional information on the Dodd-Frank Act, including certain of its rulemaking initiatives.

- *Enhanced supervision and regulation of systemically important firms.* The Dodd-Frank Act grants broad authority to federal banking regulators to establish enhanced supervisory and regulatory requirements for systemically important firms. The FRB has finalized a number of regulations implementing enhanced prudential requirements for large bank holding companies (BHCs) like Wells Fargo regarding risk-based capital and leverage, risk and liquidity management, and

- imposing debt-to-equity limits on any BHC that regulators determine poses a grave threat to the financial stability of the United States. The FRB and OCC have also finalized rules implementing stress testing requirements for large BHCs and national banks. The FRB has also finalized enhanced prudential standards that implement single counterparty credit limits, and has proposed a rule to establish remediation requirements for large BHCs experiencing financial distress. Similarly, the FRB has proposed additional requirements regarding effective risk management practices at large BHCs, including its expectations for boards of directors and senior management. In addition to the authorization of enhanced supervisory and regulatory requirements for systemically important firms, the Dodd-Frank Act also established the Financial Stability Oversight Council and the Office of Financial Research, which may recommend new systemic risk management requirements and require new reporting of systemic risks. The OCC, under separate authority, has also finalized guidelines establishing heightened governance and risk management standards for large national banks such as Wells Fargo Bank, N.A. The OCC guidelines require covered banks to establish and adhere to a written risk governance framework in order to manage and control their risk-taking activities. The guidelines also formalize roles and responsibilities for risk management practices within covered banks and create certain risk oversight responsibilities for their boards of directors.
- *Regulation of consumer financial products.* The Dodd-Frank Act established the Consumer Financial Protection Bureau (CFPB) to ensure consumers receive clear and accurate

Regulatory Matters (continued)

disclosures regarding financial products and to protect them from hidden fees and unfair, deceptive or abusive practices. With respect to residential mortgage lending, the CFPB issued a number of final rules implementing new origination, notification, disclosure and other requirements, as well as additional limitations on the fees and charges that may be increased from the estimates provided by lenders. The CFPB finalized amendments to the rule implementing the Home Mortgage Disclosure Act, resulting in a significant expansion of the data points lenders are required to collect and report to the CFPB. The CFPB also expanded the transactions covered by the rule and increased the reporting frequency from annual to quarterly for large volume lenders, such as Wells Fargo, beginning January 1, 2020. With respect to other financial products, the CFPB finalized rules, most of which became effective on April 1, 2019, to make prepaid cards subject to similar consumer protections as those provided by more traditional debit and credit cards such as fraud protection and expanded access to account information. In addition to these rulemaking activities, the CFPB is continuing its on-going supervisory examination activities of the financial services industry with respect to a number of consumer businesses and products, including mortgage lending and servicing, fair lending requirements, student lending activities, and automobile finance.

- **Volcker Rule.** The Volcker Rule, with certain exceptions, prohibits banking entities from engaging in proprietary trading or owning any interest in or sponsoring or having certain relationships with a hedge fund, a private equity fund or certain structured transactions that are deemed covered funds. Federal banking regulators, the SEC, and the Commodity Futures Trading Commission (CFTC) jointly released a final rule to implement the Volcker Rule's restrictions, and have adopted amendments to the rule to streamline and tailor the requirements for compliance.
- **Regulation of swaps and other derivatives activities.** The Dodd-Frank Act established a comprehensive framework for regulating over-the-counter derivatives and authorized the CFTC and the SEC to regulate swaps and security-based swaps, respectively. The CFTC has adopted rules applicable to our provisionally registered swap dealer, Wells Fargo Bank, N.A., that require, among other things, extensive regulatory and public reporting of swaps, central clearing and trading of swaps on exchanges or other multilateral platforms, and compliance with comprehensive internal and external business conduct standards. The SEC has implemented parallel rules applicable to security-based swaps, and is expected to implement additional related rules. In addition, federal regulators have adopted final rules establishing initial and variation margin requirements for swaps and security-based swaps not centrally cleared, rules placing restrictions on a party's right to exercise default rights under derivatives and other qualified financial contracts against applicable banking organizations, and record-keeping requirements for qualified financial contracts. All of these new rules, as well as others being considered by regulators in other jurisdictions, may negatively impact customer demand for over-the-counter derivatives, impact our ability to offer customers new derivatives or amendments to existing derivatives, and may increase our costs for engaging in swaps, security-based swaps, and other derivatives activities.
- **Regulation of interchange transaction fees (the Durbin Amendment).** The FRB has enacted a rule to implement the Durbin Amendment to the Dodd-Frank Act, which limits

debit card interchange transaction fees to those reasonable and proportional to the cost of the transaction. The rule generally established that the maximum allowable interchange fee that an issuer may receive or charge for an electronic debit transaction is the sum of 21 cents per transaction and 5 basis points multiplied by the value of the transaction.

Regulatory Capital Guidelines and Capital Plans

The Company and each of our insured depository institutions are subject to various regulatory capital adequacy requirements administered by the FRB and the OCC. For example, the Company is subject to rules issued by federal banking regulators to implement Basel III capital requirements for U.S. banking organizations. The Company and its insured depository institutions are also required to maintain specified supplementary leverage ratios. Federal banking regulators have also issued a final rule regarding the U.S. implementation of the Basel III liquidity coverage ratio. For more information on the final capital, leverage and liquidity rules, and additional capital requirements applicable to us, see the "Capital Management" and "Risk Management – Asset/Liability Management – Liquidity and Funding – Liquidity Standards" sections in this Report.

"Living Will" Requirements and Related Matters

Rules adopted by the FRB and the FDIC under the Dodd-Frank Act require large financial institutions, including Wells Fargo, to prepare and periodically submit resolution plans, also known as "living wills," that would facilitate their rapid and orderly resolution in the event of material financial distress or failure. Under the rules, rapid and orderly resolution means a reorganization or liquidation of the covered company under the U.S. Bankruptcy Code that can be accomplished in a reasonable period of time and in a manner that substantially mitigates the risk that failure would have serious adverse effects on the financial stability of the United States. In addition to the Company's resolution plan, our national bank subsidiary, Wells Fargo Bank, N.A. (the "Bank"), is also required to prepare and periodically submit a resolution plan. If the FRB and/or FDIC determine that our resolution plan has deficiencies, they may impose more stringent capital, leverage or liquidity requirements on us or restrict our growth, activities or operations until we adequately remedy the deficiencies. If the FRB and/or FDIC ultimately determine that we have been unable to remedy any deficiencies, they could require us to divest certain assets or operations. On June 27, 2019, we submitted our resolution plan to the FRB and FDIC. On December 17, 2019, the FRB and FDIC announced that the Company's 2019 resolution plan did not have any deficiencies, but they identified a specific shortcoming that would need to be addressed.

If Wells Fargo were to fail, it may be resolved in a bankruptcy proceeding or, if certain conditions are met, under the resolution regime created by the Dodd-Frank Act known as the "orderly liquidation authority." The orderly liquidation authority allows for the appointment of the FDIC as receiver for a systemically important financial institution that is in default or in danger of default if, among other things, the resolution of the institution under the U.S. Bankruptcy Code would have serious adverse effects on financial stability in the United States. If the FDIC is appointed as receiver for Wells Fargo & Company (the "Parent"), then the orderly liquidation authority, rather than the U.S. Bankruptcy Code, would determine the powers of the receiver and the rights and obligations of our security holders. The FDIC's orderly liquidation authority requires that security holders of a company in receivership bear all losses before U.S. taxpayers are

exposed to any losses, and allows the FDIC to disregard the strict priority of creditor claims under the U.S. Bankruptcy Code in certain circumstances.

The strategy described in our most recent resolution plan is a single point of entry strategy, in which the Parent would likely be the only material legal entity to enter resolution proceedings. However, we are not obligated to maintain a single point of entry strategy, and the strategy described in our resolution plan is not binding in the event of an actual resolution of Wells Fargo, whether conducted under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority. The FDIC has announced that a single point of entry strategy may be a desirable strategy under its implementation of the orderly liquidation authority, but not all aspects of how the FDIC might exercise this authority are known and additional rulemaking is possible.

To facilitate the orderly resolution of systemically important financial institutions in case of material distress or failure, federal banking regulations require that institutions, such as Wells Fargo, maintain a minimum amount of equity and unsecured debt to absorb losses and recapitalize operating subsidiaries. Federal banking regulators have also required measures to facilitate the continued operation of operating subsidiaries notwithstanding the failure of their parent companies, such as limitations on parent guarantees, and have issued guidance encouraging institutions to take legally binding measures to provide capital and liquidity resources to certain subsidiaries in order to facilitate an orderly resolution. In response to the regulators' guidance and to facilitate the orderly resolution of the Company, on June 28, 2017, the Parent entered into a support agreement, as amended and restated on June 26, 2019 (the "Support Agreement"), with WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the "IHC"), the Bank, Wells Fargo Securities, LLC ("WFS"), Wells Fargo Clearing Services, LLC ("WFCS"), and certain other direct and indirect subsidiaries of the Parent designated as material entities for resolution planning purposes (the "Covered Entities") or identified as related support entities in our resolution plan (the "Related Support Entities"). Pursuant to the Support Agreement, the Parent transferred a significant amount of its assets, including the majority of its cash, deposits, liquid securities and intercompany loans (but excluding its equity interests in its subsidiaries and certain other assets), to the IHC and will continue to transfer those types of assets to the IHC from time to time. In the event of our material financial distress or failure, the IHC will be obligated to use the transferred assets to provide capital and/or liquidity to the Bank, WFS, WFCS, and the Covered Entities pursuant to the Support Agreement. Under the Support Agreement, the IHC will also provide funding and liquidity to the Parent through subordinated notes and a committed line of credit, which, together with the issuance of dividends, is expected to provide the Parent, during business as usual operating conditions, with the same access to cash necessary to service its debts, pay dividends, repurchase its shares, and perform its other obligations as it would have had if it had not entered into these arrangements and transferred any assets. If certain liquidity and/or capital metrics fall below defined triggers, or if the Parent's board of directors authorizes it to file a case under the U.S. Bankruptcy Code, the subordinated notes would be forgiven, the committed line of credit would terminate, and the IHC's ability to pay dividends to the Parent would be restricted, any of which could materially and adversely impact the Parent's liquidity and its ability to satisfy its debts and other obligations, and could result in the commencement of bankruptcy proceedings by the Parent at an earlier time than

might have otherwise occurred if the Support Agreement were not implemented. The respective obligations under the Support Agreement of the Parent, the IHC, the Bank, and the Related Support Entities are secured pursuant to a related security agreement.

In addition to our resolution plans, we must also prepare and submit to the FRB a recovery plan that identifies a range of options that we may consider during times of idiosyncratic or systemic economic stress to remedy any financial weaknesses and restore market confidence without extraordinary government support. Recovery options include the possible sale, transfer or disposal of assets, securities, loan portfolios or businesses. The Bank must also prepare and submit to the OCC a recovery plan that sets forth the Bank's plan to remain a going concern when the Bank is experiencing considerable financial or operational stress, but has not yet deteriorated to the point where liquidation or resolution is imminent. If either the FRB or the OCC determines that our recovery plan is deficient, they may impose fines, restrictions on our business or ultimately require us to divest assets.

Other Regulatory Related Matters

- *Broker-dealer standards of conduct.* In June 2019, the SEC finalized a rule that requires broker-dealers to act in the best interest of a retail customer when making a recommendation of any securities transaction or investment strategy involving securities. This rule impacts the manner in which business is conducted with customers seeking investment advice and may affect certain investment product offerings.
- *Community Reinvestment Act (CRA) rating.* In March 2017, we announced that the OCC had downgraded our most recent CRA rating, which covers the years 2009 – 2012, to "Needs to Improve" due to previously issued regulatory consent orders. A "Needs to Improve" rating imposes regulatory restrictions and limitations on certain of the Company's nonbank activities, including its ability to engage in certain nonbank mergers and acquisitions or undertake new financial in nature activities, and CRA performance is taken into account by regulators in reviewing applications to establish bank branches and for approving proposed bank mergers and acquisitions. The rating also results in the loss of expedited processing of applications to undertake certain activities, and requires the Company to receive prior regulatory approval for certain activities, including to issue or prepay certain subordinated debt obligations, open or relocate bank branches, or make certain public welfare investments. In addition, a "Needs to Improve" rating could have an impact on the Company's relationships with certain states, counties, municipalities or other public agencies to the extent applicable law, regulation or policy limits, restricts or influences whether such entity may do business with a company that has a below "Satisfactory" rating.
- *FRB consent order regarding governance oversight and compliance and operational risk management.* On February 2, 2018, the Company entered into a consent order with the FRB. As required by the consent order, the Board submitted to the FRB a plan to further enhance the Board's governance and oversight of the Company, and the Company submitted to the FRB a plan to further improve the Company's compliance and operational risk management program. The Company continues to engage with the FRB as the Company works to address the consent order provisions. The consent order also requires the Company, following the FRB's acceptance and approval of the plans and the Company's

Regulatory Matters (continued)

adoption and implementation of the plans, to complete an initial third-party review of the enhancements and improvements provided for in the plans. Until this third-party review is complete and the plans are approved and implemented to the satisfaction of the FRB, the Company's total consolidated assets will be limited to the level as of December 31, 2017. Compliance with this asset cap will be measured on a two-quarter daily average basis to allow for management of temporary fluctuations. Additionally, after removal of the asset cap, a second third-party review must also be conducted to assess the efficacy and sustainability of the enhancements and improvements.

- *Consent orders with the CFPB and OCC regarding compliance risk management program, automobile collateral protection insurance policies, and mortgage interest rate lock extensions.* On April 20, 2018, the Company entered into consent orders with the CFPB and OCC to pay an aggregate of \$1 billion in civil money penalties to resolve matters regarding the Company's compliance risk management program and past practices involving certain automobile collateral protection insurance policies and certain

mortgage interest rate lock extensions. As required by the consent orders, the Company submitted to the CFPB and OCC an enterprise-wide compliance risk management plan and a plan to enhance the Company's internal audit program with respect to federal consumer financial law and the terms of the consent orders. In addition, as required by the consent orders, the Company submitted for non-objection plans to remediate customers affected by the automobile collateral protection insurance and mortgage interest rate lock matters, as well as a plan for the management of remediation activities conducted by the Company.

- *OCC approval of director and senior executive officer appointments and certain post-termination payments.* Under the April 2018 consent order with the OCC, Wells Fargo Bank, N.A., remains subject to requirements that were originally imposed in November 2016 to provide prior written notice to, and obtain non-objection from, the OCC with respect to changes in directors and senior executive officers, and remains subject to certain regulatory limitations on post-termination payments to certain individuals and employees.

Critical Accounting Policies

Our significant accounting policies (see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report) are fundamental to understanding our results of operations and financial condition because they require that we use estimates and assumptions that may affect the value of our assets or liabilities and financial results. Five of these policies are critical because they require management to make difficult, subjective and complex judgments about matters that are inherently uncertain and because it is likely that materially different amounts would be reported under different conditions or using different assumptions. These policies govern:

- the allowance for credit losses;
- the valuation of residential MSRs;
- the fair value of financial instruments;
- income taxes; and
- liability for contingent litigation losses.

Management and the Board's Audit Committee have reviewed and approved these critical accounting policies.

Allowance for Credit Losses

We maintain an allowance for credit losses, which consists of the allowance for loan losses and the allowance for unfunded credit commitments, which is management's estimate of credit losses inherent in the loan portfolio, including unfunded credit commitments, at the balance sheet date, excluding loans carried at fair value. For a description of our related accounting policies, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Changes in the allowance for credit losses and, therefore, in the related provision for credit losses, can materially affect net income. In applying the judgment and review required to determine the allowance for credit losses, management considers changes in economic conditions, customer behavior, and collateral value, among other influences. From time to time, economic factors or business decisions, such as the addition or liquidation of a loan product or business unit, may affect the loan portfolio, causing management to increase or decrease the allowance for credit losses. While our methodology attributes portions of the allowance for credit losses to specific portfolio

segments (commercial and consumer), the entire allowance for credit losses is available to absorb credit losses inherent in the total loan portfolio and unfunded credit commitments.

Judgment is specifically applied in:

- *Credit risk ratings applied to individual commercial loans and unfunded credit commitments.* We estimate the probability of default in accordance with the borrower's financial strength using a borrower quality rating and the severity of loss in the event of default using a collateral quality rating. Collectively, these ratings are referred to as credit risk ratings and are assigned to our commercial loans. Probability of default and severity at the time of default are statistically derived through historical observations of defaults and losses after default within each credit risk rating. Commercial loan risk ratings are evaluated based on each situation by experienced senior credit officers and are subject to periodic review by an internal team of credit specialists.
- *Economic assumptions applied to pools of consumer loans (statistically modeled).* Losses are estimated using economic variables to represent our best estimate of inherent loss. Our forecasted losses are modeled using a range of economic scenarios.
- *Selection of a credit loss estimation model that fits the credit risk characteristics of its portfolio.* We use both internally developed and vendor supplied models in this process. We often use expected loss, transition rate, flow rate, competing hazard, vintage maturation, and time series or statistical trend models, including those with economic correlations. Management must use judgment in establishing additional input metrics for the modeling processes, considering further stratification into reference data time series, sub-product, origination channel, vintage, loss type, geographic location and other predictive characteristics. The models used to determine the allowance for credit losses are validated in accordance with Company policies by an internal model validation group.
- *Assessment of limitations to credit loss estimation models.* We apply our judgment to adjust our modeled estimates to

reflect other risks that may be identified from current conditions and developments in selected portfolios.

- *Identification and measurement of impaired loans, including loans modified in a TDR.* Our experienced senior credit officers may consider a loan impaired based on their evaluation of current information and events, including loans modified in a TDR. The measurement of impairment is typically based on an analysis of the present value of expected future cash flows. The development of these expectations requires significant management judgment and review.
- *An amount for imprecision or uncertainty which reflects management's overall estimate of the effect of quantitative and qualitative factors on inherent credit losses.* This amount represents management's judgment of risks inherent in the processes and assumptions used in establishing the allowance for credit losses. This imprecision considers economic environmental factors, modeling assumptions and performance, process risk, and other subjective factors, including industry trends and emerging risk assessments.

SENSITIVITY TO CHANGES Table 49 demonstrates the impact of the sensitivity of our estimates on our allowance for credit losses.

Table 49: Allowance for Credit Losses Sensitivity Summary

	December 31, 2019	
	Estimated increase/(decrease)	
(in billions)	in allowance	
Assumption:		
Favorable (1)	\$	(3.1)
Adverse (2)		7.1

- (1) Represents a one risk rating upgrade throughout our commercial portfolio segment and a more optimistic economic outlook for modeled losses on our consumer portfolio segment.
- (2) Represents a one risk rating downgrade throughout our commercial portfolio segment, a more pessimistic economic outlook for modeled losses on our consumer portfolio segment, and incremental deterioration for PCI loans.

The sensitivity analyses provided in the previous table are hypothetical scenarios and are not considered probable. They do not represent management's view of inherent losses in the portfolio as of the balance sheet date. Because significant judgment is used, it is possible that others performing similar analyses could reach different conclusions. See the "Risk Management – Credit Risk Management – Allowance for Credit Losses" section and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for further discussion of our allowance for credit losses.

Valuation of Residential Mortgage Servicing Rights (MSRs)

MSRs are assets that represent the rights to service mortgage loans for others. We recognize MSRs when we purchase servicing rights from third parties, or retain servicing rights in connection with the sale or securitization of loans we originate (asset transfers). We also have acquired MSRs in the past under co-issuer agreements that provide for us to service loans that were originated and securitized by third-party correspondents.

We carry our MSRs related to residential mortgage loans at fair value. Periodic changes in our residential MSRs and the economic hedges used to hedge our residential MSRs are reflected in earnings.

We use a model to estimate the fair value of our residential MSRs. The model is validated by an internal model

validation group operating in accordance with Company policies. The model calculates the present value of estimated future net servicing income and incorporates inputs and assumptions that market participants use in estimating fair value. Certain significant inputs and assumptions generally are not observable in the market and require judgment to determine. If observable market indications do become available, these are factored into the estimates as appropriate:

- *The mortgage loan prepayment speed used to estimate future net servicing income.* The prepayment speed is the annual rate at which borrowers are forecasted to repay their mortgage loan principal; this rate also includes estimated borrower defaults. We use models to estimate prepayment speeds and borrower defaults which are influenced by changes in mortgage interest rates and borrower behavior.
- *The discount rate used to present value estimated future net servicing income.* The discount rate is the required rate of return investors in the market would expect for an asset with similar risk. To determine the discount rate, we consider the risk premium for uncertainties in the cash flow estimates such as from servicing operations (e.g., possible changes in future servicing costs, ancillary income and earnings on escrow accounts).
- *The expected cost to service loans used to estimate future net servicing income.* The cost to service loans includes estimates for unreimbursed expenses, such as delinquency and foreclosure costs, which considers the number of defaulted loans as well as changes in servicing processes associated with default and foreclosure management.

Both prepayment speed and discount rate assumptions can, and generally will, change quarterly as market conditions and mortgage interest rates change. For example, an increase in either the prepayment speed or discount rate assumption results in a decrease in the fair value of the MSRs, while a decrease in either assumption would result in an increase in the fair value of the MSRs. In recent years, there have been significant market-driven fluctuations in loan prepayment speeds and the discount rate. These fluctuations can be rapid and may be significant in the future. Additionally, while our current valuation reflects our best estimate of servicing costs, future regulatory or investor changes in servicing standards, as well as changes in individual state foreclosure legislation or additional market participant information regarding servicing cost assumptions, may have an impact on our servicing cost assumption and our MSR valuation in future periods.

For a description of our valuation and sensitivity of MSRs, see Note 1 (Summary of Significant Accounting Policies), Note 10 (Securitized and Variable Interest Entities), Note 11 (Mortgage Banking Activities) and Note 19 (Fair Values of Assets and Liabilities) to Financial Statements in this Report.

Fair Value of Financial Instruments

Fair value represents the price that would be received to sell the financial asset or paid to transfer the financial liability in an orderly transaction between market participants at the measurement date.

We use fair value measurements to record fair value adjustments to certain financial instruments and to determine fair value disclosures. For example, assets and liabilities held for trading purposes, marketable equity securities not held for trading purposes, debt securities available for sale, derivatives and most of our residential MLHFS are carried at fair value each period. Other financial instruments, such as certain MLHFS, most nonmarketable equity securities and substantially all of

Critical Accounting Policies (continued)

our loans held for investment, are not carried at fair value each period but may require nonrecurring fair value adjustments due to application of lower-of-cost-or-market accounting, measurement alternative accounting or write-downs of individual assets. We also disclose our estimate of fair value for financial instruments not recorded at fair value, such as loans held for investment or issuances of long-term debt.

The accounting requirements for fair value measurements include a three-level hierarchy for disclosure of assets and liabilities recorded at fair value. The classification of assets and liabilities within the hierarchy is based on whether the inputs to the valuation methodology used for measurement are observable or unobservable. Observable inputs reflect market-derived or market-based information obtained from independent sources, while unobservable inputs reflect our estimates about market data. For additional information on fair value levels, see Note 19 (Fair Values of Assets and Liabilities) to Financial Statements in this Report.

When developing fair value measurements, we maximize the use of observable inputs and minimize the use of unobservable inputs. When available, we use quoted prices in active markets to measure fair value. If quoted prices in active markets are not available, fair value measurement is based upon models that generally use market-based or independently sourced market parameters, including interest rate yield curves, prepayment speeds, option volatilities and currency rates. However, when observable market data is limited or not available, fair value estimates are typically determined using internally-developed models based on unobservable inputs. Internal models used to determine fair value are validated in accordance with Company policies by an internal model validation group. Additionally, we use third-party pricing services to obtain fair values, which are used to either record the price of an instrument or to corroborate internally-developed prices. Third-party price validation procedures are performed over the reasonableness of the fair value measurements. For additional information on our use of pricing services, see Note 19 (Fair Value of Assets and Liabilities) to Financial Statements in this Report.

When using internally-developed models based on unobservable inputs, management judgment is necessary as we are required to make judgments about significant assumptions market participants would use to estimate fair value. Determination of these assumptions includes consideration of market conditions and liquidity levels. Changes in the market conditions, such as reduced liquidity in the capital markets or changes in secondary market activities, may reduce the availability and reliability of quoted prices or observable data used to determine fair value. In such cases, it may be appropriate to adjust available quoted prices or observable market data. For example, we adjust the vendor or broker price using internal models based on discounted cash flows when the impact of illiquid markets has not already been incorporated in the fair value measurement. Additionally, for certain residential MLHFS and certain debt and equity securities where the significant inputs have become unobservable due to illiquid markets and vendor or broker pricing is not used, our discounted cash flow model uses a discount rate that reflects what we believe a market participant would require in light of the illiquid market.

We continually assess the level and volume of market activity in our debt and equity security classes in determining adjustments, if any, to price quotes. Given market conditions can change over time, our determination of which securities markets are considered active or inactive can change. If we determine a market to be inactive, the degree to which price quotes require adjustment, can also change.

Significant judgment is also required to determine whether certain assets measured at fair value are classified as Level 2 or Level 3 of the fair value hierarchy as described in Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

When making this judgment, we consider available information, including observable market data, indications of market liquidity and orderliness, and our understanding of the valuation techniques and significant inputs used to estimate fair value. The classification of Level 2 or Level 3 is based upon the specific facts and circumstances of each instrument or instrument category and judgments are made regarding the significance of the Level 3 inputs to each instrument's fair value measurement in its entirety. If Level 3 inputs are considered significant, the instrument is classified as Level 3.

Table 50 presents our (1) assets and liabilities recorded at fair value on a recurring basis and (2) Level 3 assets and liabilities recorded at fair value on a recurring basis, both presented as a percentage of our total assets and total liabilities.

Table 50: Fair Value Level 3 Summary

(\$ in billions)	December 31, 2019		December 31, 2018	
	Total balance	Level 3 (1)	Total balance	Level 3 (1)
Assets carried at fair value	\$ 428.6	24.3	408.4	25.3
As a percentage of total assets	22%	1	22	1
Liabilities carried at fair value	\$ 26.5	1.8	28.2	1.6
As a percentage of total liabilities	2%	*	2	*

* Less than 1%.

(1) Before derivative netting adjustments.

See Note 19 (Fair Values of Assets and Liabilities) to Financial Statements in this Report for a complete discussion on our fair value of financial instruments, our related measurement techniques and the impact to our financial statements.

Income Taxes

We file consolidated and separate company U.S. federal income tax returns, non-U.S. tax returns and various combined and separate company state tax returns.

We evaluate two components of income tax expense: current and deferred income tax expense. Current income tax expense represents our estimated taxes to be paid or refunded for the current period and includes income tax expense related to our uncertain tax positions. Uncertain tax positions that meet the more likely than not recognition threshold are measured to determine the amount of benefit to recognize. An uncertain tax position is measured at the largest amount of benefit that management believes has a greater than 50% likelihood of realization upon settlement. Tax benefits not meeting our realization criteria represent unrecognized tax benefits.

Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. We determine deferred income taxes using the balance sheet method. Under this method, the net deferred tax asset or liability is based on the tax effects of the differences between the book and tax basis of assets and liabilities, and recognizes enacted changes in tax rates and laws in the period in which they occur. Deferred tax assets are recognized subject to management's judgment that realization is more likely than not.

We do not intend to distribute earnings of certain non-U.S. subsidiaries in a taxable manner, and therefore intend to limit

distributions of non-U.S. earnings previously taxed in the U.S., that would qualify for the 100% dividends received deduction, and that would not result in any significant state or non-U.S. taxes. All other undistributed non-U.S. earnings will continue to be permanently reinvested outside the U.S. and the related tax liability on these earnings is insignificant.

The income tax laws of the jurisdictions in which we operate are complex and subject to different interpretations by the taxpayer and the relevant government taxing authorities. In establishing a provision for income tax expense, we must make judgments and interpretations about the application of these inherently complex tax laws. We must also make estimates about when in the future certain items will affect taxable income in the various tax jurisdictions, both domestic and international. Our interpretations may be subjected to review during examination by taxing authorities and disputes may arise over the respective tax positions. We attempt to resolve these disputes during the tax examination and audit process and ultimately through the court systems when applicable.

We monitor relevant tax authorities and revise our estimate of accrued income taxes due to changes in income tax laws and their interpretation by the courts and regulatory authorities on a quarterly basis. Revisions of our estimate of accrued income taxes also may result from our own income tax planning and from the resolution of income tax controversies. Such revisions in our estimates may be material to our operating results for any given quarter.

See Note 24 (Income Taxes) to Financial Statements in this Report for a further description of our provision for income taxes and related income tax assets and liabilities.

Liability for Contingent Litigation Losses

The Company is involved in a number of judicial, regulatory, governmental, arbitration and other proceedings or investigations concerning matters arising from the conduct of its business activities, and many of those proceedings and investigations expose the Company to potential financial loss. We establish accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. For such accruals, we record the amount we consider to be the best estimate within a range of potential losses that are both probable and estimable; however, if we cannot determine a best estimate, then we record the low end of the range of those potential losses. The actual costs of resolving legal actions may be substantially higher or lower than the amounts accrued for those actions.

We apply judgment when establishing an accrual for potential losses associated with legal actions and in establishing the range of reasonably possible losses in excess of the accrual. Our judgment in establishing accruals and the range of reasonably possible losses in excess of the Company's accrual for probable and estimable losses is influenced by our understanding of information currently available related to the legal evaluation and potential outcome of actions, including input and advice on these matters from our internal counsel, external counsel and senior management. These matters may be in various stages of investigation, discovery or proceedings. They may also involve a wide variety of claims across our businesses, legal entities and jurisdictions. The eventual outcome may be a scenario that was not considered or was considered remote in anticipated occurrence. Accordingly, our estimate of potential losses will change over time and the actual losses may vary significantly.

The outcomes of legal actions are unpredictable and subject to significant uncertainties, and it is inherently difficult to determine whether any loss is probable or even possible. It is also inherently difficult to estimate the amount of any loss and there may be matters for which a loss is probable or reasonably possible but not currently estimable. Accordingly, actual losses may be in excess of the established accrual or the range of reasonably possible loss.

See Note 17 (Legal Actions) to Financial Statements in this Report for further information.

Current Accounting Developments

Table 51 provides the significant accounting updates applicable to us that have been issued by the Financial Accounting Standards Board (FASB) but are not yet effective.

Table 51: Current Accounting Developments – Issued Standards

Description	Effective date and financial statement impact
<p>ASU 2018-12 – Financial Services – Insurance (Topic 944): Targeted Improvements to the Accounting for Long-Duration Contracts and subsequent related updates</p>	
<p>The Update requires all features in long-duration insurance contracts that meet the definition of a market risk benefit to be measured at fair value through earnings with changes in fair value attributable to our own credit risk recognized in other comprehensive income. Currently, two measurement models exist for these features, fair value and insurance accrual. The Update requires the use of a standardized discount rate and routine updates for insurance assumptions used in valuing the liability for future policy benefits for traditional long-duration contracts. The Update also simplifies the amortization of deferred acquisition costs.</p>	<p>The guidance becomes effective on January 1, 2022. Certain of our variable annuity reinsurance products meet the definition of market risk benefits and will require the associated insurance related reserves for these products to be measured at fair value as of the earliest period presented, with the cumulative effect on fair value for changes attributable to our own credit risk recognized in the beginning balance of accumulated other comprehensive income. The cumulative effect of the difference between fair value and carrying value, excluding the effect of our own credit, will be recognized in the opening balance of retained earnings. As of December 31, 2019, we held \$1.1 billion in insurance-related reserves of which \$489 million was in scope of the Update. A total of \$429 million was associated with products that meet the definition of market risk benefits, and of this amount, \$17 million was measured at fair value under current accounting standards. The market risk benefits are largely indexed to U.S. equity and fixed income markets. Upon adoption, we may incur periodic earnings volatility from changes in the fair value of market risk benefits generally due to the long duration of these contracts. We plan to economically hedge this volatility, where feasible. The ultimate impact of these changes will depend on the composition of our market risk benefits portfolio at the date of adoption. Changes in the accounting for the liability of future policy benefits for traditional long-duration contracts and deferred acquisition costs will be applied to all outstanding long-duration contracts on the basis of their existing carrying amounts at the beginning of the earliest period presented, and are not expected to be material.</p>
<p>ASU 2016-13 – Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments and subsequent related updates</p>	
<p>The Update changes the accounting for the measurement of credit losses on loans and debt securities. For loans and held-to-maturity debt securities, the Update requires a current expected credit loss (CECL) measurement to estimate the allowance for credit losses (ACL) for the remaining contractual term, adjusted for prepayments, of the financial asset (including off-balance sheet credit exposures) using historical experience, current conditions, and reasonable and supportable forecasts. The Update eliminates the existing guidance for PCI loans, but requires an allowance for purchased financial assets with more than an insignificant deterioration of credit since origination. In addition, the Update modifies the other-than-temporary impairment model for available-for-sale debt securities to require an allowance for credit impairment instead of a direct write-down, which allows for reversal of credit impairments in future periods based on improvements in credit.</p>	<p>We adopted the guidance on January 1, 2020. Our implementation process included development of loss forecasting models, evaluation of technical accounting topics, updates to our allowance documentation, reporting processes, and related internal controls.</p> <p>Upon adoption, we recognized an overall decrease in our ACL of approximately \$1.3 billion, as a cumulative effect adjustment from change in accounting policies. This adjustment, net of income tax adjustments, increased our retained earnings and regulatory capital amounts and ratios. For more information on the impact of CECL by type of financial asset, see Table 51b (ASU 2016-03 Adoption Impact to Allowance for Credit Losses (ACL)) in this Report.</p> <p>Our approach for estimating expected life-time credit losses for loans and debt securities includes the following key components:</p> <ul style="list-style-type: none"> • An initial loss forecast period of one year for all portfolio segments and classes of financing receivables and off-balance-sheet credit exposures. This period reflects management's expectation of losses based on forward-looking economic scenarios over that time. • A historical loss forecast period covering the remaining contractual term, adjusted for prepayments, by portfolio segment and class of financing receivables based on the change in key historical economic variables during representative historical expansionary and recessionary periods. • A reversion period of up to two years connecting the initial loss forecast to the historical loss forecast based on economic conditions at the measurement date. • Utilization of discounted cash flow (DCF) methods to measure credit impairment for loans modified in a troubled debt restructuring, unless they are collateral dependent and measured at the fair value of collateral. The DCF methods obtain estimated life-time credit losses using the conceptual components described above. • For available-for-sale debt securities and certain beneficial interests classified as held-to-maturity, we utilize the DCF methods to measure the ACL, which incorporate expected credit losses using the conceptual components described above. The ACL on available-for-sale debt securities is subject to a limitation based on the fair value of the debt securities.
<p>We expect future changes in our ACL to be more volatile under CECL. Future amounts of the ACL will be based on a variety of factors, including changes in loan volumes, portfolio credit quality, and general economic conditions. General economic conditions will be forecasted using economic variables, which will create volatility as those variables change over time. See Table 51a for key economic variables used for our loan portfolios.</p>	

Table 51a: Key Economic Variables

Loan Portfolio	Key economic variables
Total commercial	<ul style="list-style-type: none"> Gross domestic product Commercial real estate asset prices, where applicable
Real estate 1-4 family mortgage	<ul style="list-style-type: none"> Home price index Unemployment rate
Other consumer (including credit card, automobile, and other revolving credit and installment)	<ul style="list-style-type: none"> Unemployment rate

Table 51b: ASU 2016-13 Adoption Impact to Allowance for Credit Losses (ACL) (1)

(in billions)	Dec 31, 2019			ASU 2016-13 Adoption Impact	Jan 1, 2020	
	Balance Outstanding	ACL Balance	Coverage		ACL Balance	Coverage
Total commercial (2)	\$ 515.7	6.2	1.2%	\$ (2.9)	3.4	0.7%
Real estate 1-4 family mortgage (3)	323.4	0.9	0.3	—	0.9	0.3
Credit card (4)	41.0	2.3	5.5	0.7	2.9	7.1
Automobile (4)	47.9	0.5	1.0	0.3	0.7	1.5
Other revolving credit and installment (4)	34.3	0.6	1.6	0.6	1.2	3.5
Total consumer	446.5	4.2	0.9	1.5	5.7	1.3
Total loans	962.3	10.5	1.1	(1.3)	9.1	0.9
Available-for-sale and held-to-maturity debt securities and other assets (5)	420.0	0.1	NM	—	0.1	NM
Total	\$ 1,382.3	10.6	NM	\$ (1.3)	9.3	NM

NM – Not meaningful

(1) Amounts presented in this table may not equal the sum of its components due to rounding.

(2) Decrease reflecting shorter contractual maturities given limitation to contractual term.

(3) Impact reflects an increase due to longer contractual term, offset by expectation of recoveries in collateral value on mortgage loans previously written down significantly below current recovery value.

(4) Increase due to longer contractual term or indeterminate maturities.

(5) Excludes other financial assets in the scope of CECL that do not have an allowance for credit losses based on the nature of the asset.

Other Accounting Developments

The following Updates are applicable to us but are not expected to have a material impact on our consolidated financial statements:

- ASU 2020-01 – Investments - Equity Securities (Topic 321), Investments – Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815): *Clarifying the Interactions between Topic 321, Topic 323, and Topic 815 (a consensus of the FASB Emerging Issues Task Force)*
- ASU 2019-12 – Income Taxes (Topic 740): *Simplifying the Accounting for Income Taxes*
- ASU 2019-04 – Codification Improvements to Topic 326, *Financial Instruments – Credit Losses*, Topic 815, *Derivatives and Hedging*, and Topic 825, *Financial Instruments*. This Update includes guidance on recoveries of financial assets, which has been included in the discussion for ASU 2016-13 above.

- ASU 2018-17 – Consolidation (Topic 810): *Targeted Improvements to Related Party Guidance for Variable Interest Entities*
- ASU 2018-15 – Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): *Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (a consensus of the FASB Emerging Issues Task Force)*
- ASU 2018-13 – Fair Value Measurement (Topic 820): *Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*. We fully adopted this guidance in first quarter 2020.
- ASU 2017-04 – Intangibles – Goodwill and Other (Topic 350): *Simplifying the Test for Goodwill Impairment*

Forward-Looking Statements

This document contains forward-looking statements. In addition, we may make forward-looking statements in our other documents filed or furnished with the SEC, and our management may make forward-looking statements orally to analysts, investors, representatives of the media and others. Forward-looking statements can be identified by words such as “anticipates,” “intends,” “plans,” “seeks,” “believes,” “estimates,” “expects,” “target,” “projects,” “outlook,” “forecast,” “will,” “may,” “could,” “should,” “can” and similar references to future periods. In particular, forward-looking statements include, but are not limited to, statements we make about: (i) the future operating or financial performance of the Company, including our outlook for future growth; (ii) our noninterest expense and efficiency ratio; (iii) future credit quality and performance, including our expectations regarding future loan losses and our allowance for credit losses; (iv) the appropriateness of the allowance for credit losses; (v) our expectations regarding net interest income and net interest margin; (vi) loan growth or the reduction or mitigation of risk in our loan portfolios; (vii) future capital or liquidity levels or targets, our estimated Common Equity Tier 1 ratio, and our estimated total loss absorbing capacity ratio; (viii) the performance of our mortgage business and any related exposures; (ix) the expected outcome and impact of legal, regulatory and legislative developments, as well as our expectations regarding compliance therewith; (x) future common stock dividends, common share repurchases and other uses of capital; (xi) our targeted range for return on assets, return on equity, and return on tangible common equity; (xii) expectations regarding our effective income tax rate; (xiii) the outcome of contingencies, such as legal proceedings; and (xiv) the Company’s plans, objectives and strategies.

Forward-looking statements are not based on historical facts but instead represent our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. Our actual results may differ materially from those contemplated by the forward-looking statements. We caution you, therefore, against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. While there is no assurance that any list of risks and uncertainties or risk factors is complete, important factors that could cause actual results to differ materially from those in the forward-looking statements include the following, without limitation:

- current and future economic and market conditions, including the effects of declines in housing prices, high unemployment rates, U.S. fiscal debt, budget and tax matters, geopolitical matters, and any slowdown in global economic growth;
- our capital and liquidity requirements (including under regulatory capital standards, such as the Basel III capital standards) and our ability to generate capital internally or raise capital on favorable terms;
- financial services reform and other current, pending or future legislation or regulation that could have a negative effect on our revenue and businesses, including the Dodd-Frank Act and other legislation and regulation relating to bank products and services;
- developments in our mortgage banking business, including the extent of the success of our mortgage loan modification

- efforts, the amount of mortgage loan repurchase demands that we receive, any negative effects relating to our mortgage servicing, loan modification or foreclosure practices, and the effects of regulatory or judicial requirements or guidance impacting our mortgage banking business and any changes in industry standards;
- our ability to realize any efficiency ratio or expense target as part of our expense management initiatives, including as a result of business and economic cyclical, seasonality, changes in our business composition and operating environment, growth in our businesses and/or acquisitions, and unexpected expenses relating to, among other things, litigation and regulatory matters;
- the effect of the current interest rate environment or changes in interest rates or in the level or composition of our assets or liabilities on our net interest income, net interest margin and our mortgage originations, mortgage servicing rights and mortgage loans held for sale;
- significant turbulence or a disruption in the capital or financial markets, which could result in, among other things, reduced investor demand for mortgage loans, a reduction in the availability of funding or increased funding costs, and declines in asset values and/or recognition of other-than-temporary impairment on securities held in our debt securities and equity securities portfolios;
- the effect of a fall in stock market prices on our investment banking business and our fee income from our brokerage, asset and wealth management businesses;
- negative effects from the retail banking sales practices matter and from other instances where customers may have experienced financial harm, including on our legal, operational and compliance costs, our ability to engage in certain business activities or offer certain products or services, our ability to keep and attract customers, our ability to attract and retain qualified team members, and our reputation;
- resolution of regulatory matters, litigation, or other legal actions, which may result in, among other things, additional costs, fines, penalties, restrictions on our business activities, reputational harm, or other adverse consequences;
- a failure in or breach of our operational or security systems or infrastructure, or those of our third-party vendors or other service providers, including as a result of cyber attacks;
- the effect of changes in the level of checking or savings account deposits on our funding costs and net interest margin;
- fiscal and monetary policies of the Federal Reserve Board;
- changes to U.S. tax guidance and regulations, as well as the effect of discrete items on our effective income tax rate;
- our ability to develop and execute effective business plans and strategies; and
- the other risk factors and uncertainties described under “Risk Factors” in this Report.

In addition to the above factors, we also caution that the amount and timing of any future common stock dividends or repurchases will depend on the earnings, cash requirements and financial condition of the Company, market conditions, capital requirements (including under Basel capital standards), common stock issuance requirements, applicable law and regulations (including federal securities laws and federal banking regulations), and other factors deemed relevant by the

Company's Board of Directors, and may be subject to regulatory approval or conditions.

For more information about factors that could cause actual results to differ materially from our expectations, refer to our reports filed with the Securities and Exchange Commission, including the discussion under "Risk Factors" in this Report, as filed with the Securities and Exchange Commission and available on its website at www.sec.gov.

Any forward-looking statement made by us speaks only as of the date on which it is made. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

Risk Factors

An investment in the Company involves risk, including the possibility that the value of the investment could fall substantially and that dividends or other distributions on the investment could be reduced or eliminated. We discuss below risk factors that could adversely affect our financial results and condition, and the value of, and return on, an investment in the Company.

RISKS RELATED TO THE ECONOMY, FINANCIAL MARKETS, INTEREST RATES AND LIQUIDITY

As one of the largest lenders in the U.S. and a provider of financial products and services to consumers and businesses across the U.S. and internationally, our financial results have been, and will continue to be, materially affected by general economic conditions, and a deterioration in economic conditions or in the financial markets may materially adversely affect our lending and other businesses and our financial results and condition. We generate revenue from the interest and fees we charge on the loans and other products and services we sell, and a substantial amount of our revenue and earnings comes from the net interest income and fee income that we earn from our consumer and commercial lending and banking businesses, including our mortgage banking business. These businesses have been, and will continue to be, materially affected by the state of the U.S. economy, particularly unemployment levels and home prices. Although the U.S. economy has continued to gradually improve from the depressed levels of 2008 and early 2009, economic growth has at times been slow and uneven. In addition, the negative effects and continued uncertainty stemming from U.S. fiscal and political matters, including concerns about deficit levels, taxes and U.S. debt ratings, have impacted and may continue to impact the global economic recovery. Moreover, geopolitical matters, including international political unrest or disturbances, Britain's vote to withdraw from the European Union, as well as continued concerns over commodity prices, restrictions on international trade and corresponding retaliatory measures, and global economic difficulties, may impact the stability of financial markets and the global economy. In particular, Britain's withdrawal from the European Union and the final terms of its exit following the existing transition period could increase economic barriers between Britain and the European Union, limit our ability to conduct business in the European Union, impose additional costs on us, subject us to different laws, regulations and/or regulatory authorities, or adversely impact our business,

Forward-looking Non-GAAP Financial Measures. From time to time management may discuss forward-looking non-GAAP financial measures, such as forward-looking estimates or targets for return on average tangible common equity. We are unable to provide a reconciliation of forward-looking non-GAAP financial measures to their most directly comparable GAAP financial measures because we are unable to provide, without unreasonable effort, a meaningful or accurate calculation or estimation of amounts that would be necessary for the reconciliation due to the complexity and inherent difficulty in forecasting and quantifying future amounts or when they may occur. Such unavailable information could be significant to future results.

financial results and operating model. For example, certain operations of our broker-dealer in London may be impacted by the terms and conditions of Britain's exit. Although we are transitioning certain of these operations to other European countries, there is no guarantee that we will be able to operate or conduct business in the European Union in the same manner or with the same effectiveness following the end of the transition period for Britain's withdrawal. A prolonged period of slow growth in the global economy, particularly in the U.S., or any deterioration in general economic conditions and/or the financial markets resulting from the above matters or any other events or factors that may disrupt or dampen the global economic recovery, could materially adversely affect our financial results and condition.

A weakening in business or economic conditions, including higher unemployment levels or declines in home prices, can also adversely affect our borrowers' ability to repay their loans, which can negatively impact our credit performance. If unemployment levels worsen or if home prices fall we would expect to incur elevated charge-offs and provision expense from increases in our allowance for credit losses. These conditions may adversely affect not only consumer loan performance but also commercial and CRE loans, especially for those business borrowers that rely on the health of industries that may experience deteriorating economic conditions. The ability of these and other borrowers to repay their loans may deteriorate, causing us, as one of the largest commercial and CRE lenders in the U.S., to incur significantly higher credit losses. In addition, weak or deteriorating economic conditions make it more challenging for us to increase our consumer and commercial loan portfolios by making loans to creditworthy borrowers at attractive yields. Furthermore, weak economic conditions, as well as competition and/or increases in interest rates, could soften demand for our loans resulting in our retaining a much higher amount of lower yielding liquid assets on our balance sheet. If economic conditions do not continue to improve or if the economy worsens and unemployment rises, which also would likely result in a decrease in consumer and business confidence and spending, the demand for our credit products, including our mortgages, may fall, reducing our interest and noninterest income and our earnings.

A deterioration in business and economic conditions, which may erode consumer and investor confidence levels, and/or increased volatility of financial markets, also could adversely affect financial results for our fee-based businesses, including our investment advisory, mutual fund, securities brokerage,

Risk Factors (continued)

wealth management, and investment banking businesses. In 2019, approximately 25% of our revenue was fee income, which included trust and investment fees, card fees and other fees. We earn fee income from managing assets for others and providing brokerage and other investment advisory and wealth management services. Because investment management fees are often based on the value of assets under management, a fall in the market prices of those assets could reduce our fee income. Changes in stock market prices could affect the trading activity of investors, reducing commissions and other fees we earn from our brokerage business. In addition, adverse market conditions may negatively affect the performance of products we have provided to customers, which may expose us to legal actions or additional costs. The U.S. stock market experienced all-time highs in 2019, but also experienced significant volatility and there is no guarantee that high price levels will continue or that price levels will stabilize. Poor economic conditions and volatile or unstable financial markets also can negatively affect our debt and equity underwriting and advisory businesses, as well as our trading activities and venture capital businesses. Any deterioration in global financial markets and economies, including as a result of any international political unrest or disturbances, may adversely affect the revenues and earnings of our international operations, particularly our global financial institution and correspondent banking services.

For more information, refer to the “Risk Management – Asset/Liability Management” and “– Credit Risk Management” sections in this Report.

Changes in interest rates and financial market values could reduce our net interest income and earnings, as well as our other comprehensive income, including as a result of recognizing losses on the debt and equity securities that we hold in our portfolio or trade for our customers. Our net interest income is the interest we earn on loans, debt securities and other assets we hold less the interest we pay on our deposits, long-term and short-term debt, and other liabilities. Net interest income is a measure of both our net interest margin – the difference between the yield we earn on our assets and the interest rate we pay for deposits and our other sources of funding – and the amount of earning assets we hold. Changes in either our net interest margin or the amount or mix of earning assets we hold could affect our net interest income and our earnings. Changes in interest rates can affect our net interest margin. Although the yield we earn on our assets and our funding costs tend to move in the same direction in response to changes in interest rates, one can rise or fall faster than the other, causing our net interest margin to expand or contract. If our funding costs rise faster than the yield we earn on our assets or if the yield we earn on our assets falls faster than our funding costs, our net interest margin could contract.

The amount and type of earning assets we hold can affect our yield and net interest margin. We hold earning assets in the form of loans and debt and equity securities, among other assets. As noted above, if the economy worsens we may see lower demand for loans by creditworthy customers, reducing our net interest income and yield. In addition, our net interest income and net interest margin can be negatively affected by a prolonged low interest rate environment as it may result in us holding lower yielding loans and securities on our balance sheet, particularly if we are unable to replace the maturing higher yielding assets with similar higher yielding assets. Increases in interest rates, however, may negatively affect loan demand and could result in higher credit losses as borrowers may have more difficulty making higher interest payments. As described below,

changes in interest rates also affect our mortgage business, including the value of our MSRs.

Changes in the slope of the “yield curve” – or the spread between short-term and long-term interest rates – could also reduce our net interest margin. Normally, the yield curve is upward sloping, meaning short-term rates are lower than long-term rates. When the yield curve flattens, or even inverts, our net interest margin could decrease if the cost of our short-term funding increases relative to the yield we can earn on our long-term assets. Moreover, a negative interest rate environment, in which interest rates drop below zero, could reduce our net interest margin and net interest income due to a likely decline in the interest we could earn on loans and other earning assets, while also likely requiring us to pay to maintain our deposits with the FRB.

The interest we earn on our loans may be tied to U.S.-denominated interest rates such as the federal funds rate while the interest we pay on our debt may be based on international rates such as LIBOR. If the federal funds rate were to fall without a corresponding decrease in LIBOR, we might earn less on our loans without any offsetting decrease in our funding costs. This could lower our net interest margin and our net interest income.

We assess our interest rate risk by estimating the effect on our earnings under various scenarios that differ based on assumptions about the direction, magnitude and speed of interest rate changes and the slope of the yield curve. We hedge some of that interest rate risk with interest rate derivatives. We also rely on the “natural hedge” that our mortgage loan originations and servicing rights can provide.

We generally do not hedge all of our interest rate risk. There is always the risk that changes in interest rates, credit spreads or option volatility could reduce our net interest income and earnings, as well as our other comprehensive income, in material amounts, especially if actual conditions turn out to be materially different than what we assumed. For example, if interest rates rise or fall faster than we assumed or the slope of the yield curve changes, we may incur significant losses on debt securities we hold as investments. To reduce our interest rate risk, we may rebalance our portfolios of debt securities, equity securities and loans, refinance our debt and take other strategic actions. We may incur losses when we take such actions.

We hold debt and equity securities, including U.S. Treasury and federal agency securities and federal agency MBS, securities of U.S. states and political subdivisions, residential and commercial MBS, corporate debt securities, other asset-backed securities and marketable equity securities, including securities relating to our venture capital activities. Because of changing economic and market conditions, as well as credit ratings, affecting issuers and the performance of any collateral underlying the securities, we may be required to recognize OTTI in future periods on the securities we hold. Furthermore, the value of the debt securities we hold can fluctuate due to changes in interest rates, issuer creditworthiness, and other factors. Our net income also is exposed to changes in interest rates, credit spreads, foreign exchange rates, and equity and commodity prices in connection with our trading activities, which are conducted primarily to accommodate the investment and risk management activities of our customers, as well as when we execute economic hedging to manage certain balance sheet risks. Trading debt securities and equity securities held for trading are carried at fair value with realized and unrealized gains and losses recorded in noninterest income. As part of our business to support our customers, we trade public debt and equity securities that are subject to market fluctuations with gains and losses recognized in net income. In addition, although

high market volatility can increase our exposure to trading-related losses, periods of low volatility may have an adverse effect on our businesses as a result of reduced customer activity levels. Although we have processes in place to measure and monitor the risks associated with our trading activities, including stress testing and hedging strategies, there can be no assurance that our processes and strategies will be effective in avoiding losses that could have a material adverse effect on our financial results.

The value of our marketable and nonmarketable equity securities can fluctuate from quarter to quarter. Marketable equity securities are carried at fair value with unrealized gains and losses reflected in earnings. Nonmarketable equity securities are carried under the cost method, equity method, or measurement alternative, while others are carried at fair value with unrealized gains and losses reflected in earnings. Earnings from our equity securities portfolio may be volatile and hard to predict, and may have a significant effect on our earnings from period to period. When, and if, we recognize gains may depend on a number of factors, including general economic and market conditions, the prospects of the companies in which we invest, when a company goes public, the size of our position relative to the public float, and whether we are subject to any resale restrictions.

Nonmarketable equity securities include our private equity and venture capital investments that could result in significant OTTI losses for those investments carried under the measurement alternative or equity method. If we determine there is OTTI for an investment, we write-down the carrying value of the investment, resulting in a charge to earnings, which could be significant.

For more information, refer to the “Risk Management – Asset/Liability Management – Interest Rate Risk”, “– Mortgage Banking Interest Rate and Market Risk”, “– Market Risk – Trading Activities”, and “– Market Risk – Equity Securities” and the “Balance Sheet Analysis – Available-for-Sale and Held-to-Maturity Debt Securities” sections in this Report and Note 4 (Trading Activities), Note 5 (Available-for-Sale and Held-to-Maturity Debt Securities) and Note 8 (Equity Securities) to Financial Statements in this Report.

Uncertainty about the future of the London Interbank Offered Rate (LIBOR) may adversely affect our business, results of operations, and financial condition. Due to uncertainty surrounding the suitability and sustainability of LIBOR, central banks and global regulators have called for financial market participants to prepare for the discontinuation of LIBOR by the end of 2021. We have a significant number of assets and liabilities referenced to LIBOR and other interbank offered rates such as commercial loans, adjustable-rate mortgage loans, derivatives, debt securities, and long-term debt. When any such benchmark rate or other referenced financial metric is significantly changed, replaced or discontinued, or ceases to be recognized as an acceptable market benchmark rate or financial metric, there may be uncertainty or differences in the calculation of the applicable interest rate or payment amount depending on the terms of the governing instrument.

This could impact the financial performance of previously booked transactions, result in losses on financial instruments we hold, require different hedging strategies or result in ineffective or increased basis risk on existing hedges, impact the overall interest rate environment and the availability or cost of floating-rate funding, and affect our capital and liquidity planning and management. In addition, the transition to using any new benchmark rate or other financial metric may require changes to

existing transaction data, products, systems, models, operations, and pricing processes, require substantial changes to existing documentation and the renegotiation of a substantial volume of previously booked transactions, and could result in significant operational, systems, or other practical challenges, increased compliance, legal and operational costs, heightened expectations and scrutiny from regulators, reputational harm, or other adverse consequences. Furthermore, the transition away from widely used benchmark rates like LIBOR could result in customers or other market participants challenging the determination of their interest payments, disputing the interpretation or implementation of contract “fallback” provisions and other transition related changes, or entering into fewer transactions or postponing their financing needs, which could reduce our revenue and adversely affect our business. Moreover, to the extent borrowers with loans referenced to LIBOR, such as adjustable rate mortgage loans, experience higher interest payments as a result of the transition to a new benchmark rate, our customers’ ability to repay their loans may be adversely affected, which can negatively impact our credit performance.

For additional information on the discontinuation of LIBOR and the steps we are taking to address and mitigate the risks we have identified, refer to the “Risk Management - Asset/Liability Management - LIBOR Transition” section in this Report.

Effective liquidity management, which ensures that we can meet customer loan requests, customer deposit maturities/withdrawals and other cash commitments, including principal and interest payments on our debt, efficiently under both normal operating conditions and other unpredictable circumstances of industry or financial market stress, is essential for the operation of our business, and our financial results and condition could be materially adversely affected if we do not effectively manage our liquidity. Our liquidity is

essential for the operation of our business. We primarily rely on bank deposits to be a low-cost and stable source of funding for the loans we make and the operation of our business. Customer deposits, which include noninterest-bearing deposits, interest-bearing checking, savings certificates, certain market rate and other savings, and certain non-U.S. deposits, have historically provided us with a sizable source of relatively stable and low-cost funds. In addition to customer deposits, our sources of liquidity include certain debt and equity securities, our ability to sell or securitize loans in secondary markets and to pledge loans to access secured borrowing facilities through the FHLB and the FRB, and our ability to raise funds in domestic and international money through capital markets.

Our liquidity and our ability to fund and run our business could be materially adversely affected by a variety of conditions and factors, including financial and credit market disruption and volatility or a lack of market or customer confidence in financial markets in general similar to what occurred during the financial crisis in 2008 and early 2009, which may result in a loss of customer deposits or outflows of cash or collateral and/or our inability to access capital markets on favorable terms. Market disruption and volatility could impact our credit spreads, which are the amount in excess of the interest rate of U.S. Treasury securities, or other benchmark securities, of the same maturity that we need to pay to our funding providers. Increases in interest rates and our credit spreads could significantly increase our funding costs. Other conditions and factors that could materially adversely affect our liquidity and funding include a lack of market or customer confidence in the Company or negative news about the Company or the financial services industry generally which also may result in a loss of deposits and/or

Risk Factors (continued)

negatively affect our ability to access the capital markets; our inability to sell or securitize loans or other assets; disruptions or volatility in the repurchase market which also may increase our short-term funding costs; and, as described below, reductions in one or more of our credit ratings. Many of the above conditions and factors may be caused by events over which we have little or no control. While market conditions have improved since the financial crisis, there can be no assurance that significant disruption and volatility in the financial markets will not occur in the future. For example, concerns over geopolitical issues, commodity and currency prices, as well as global economic conditions, may cause financial market volatility.

In addition, concerns regarding U.S. government debt levels and any associated downgrade of U.S. government debt ratings may cause uncertainty and volatility as well. A downgrade of the sovereign debt ratings of the U.S. government or the debt ratings of related institutions, agencies or instrumentalities, as well as other fiscal or political events could, in addition to causing economic and financial market disruptions, materially adversely affect the market value of the U.S. government securities that we hold, the availability of those securities as collateral for borrowing, and our ability to access capital markets on favorable terms, as well as have other material adverse effects on the operation of our business and our financial results and condition.

As noted above, we rely heavily on bank deposits for our funding and liquidity. We compete with banks and other financial services companies for deposits. If our competitors raise the rates they pay on deposits our funding costs may increase, either because we raise our rates to avoid losing deposits or because we lose deposits and must rely on more expensive sources of funding. Higher funding costs reduce our net interest margin and net interest income. Checking and savings account balances and other forms of customer deposits may decrease when customers perceive alternative investments, such as the stock market, as providing a better risk/return tradeoff. When customers move money out of bank deposits and into other investments, we may lose a relatively low-cost source of funds, increasing our funding costs and negatively affecting our liquidity.

If we are unable to continue to fund our assets through customer bank deposits or access capital markets on favorable terms or if we suffer an increase in our borrowing costs or otherwise fail to manage our liquidity effectively (including on an intraday basis), our liquidity, net interest margin, financial results and condition may be materially adversely affected. As we did during the financial crisis, we may also need, or be required by our regulators, to raise additional capital through the issuance of common stock, which could dilute the ownership of existing stockholders, or reduce or even eliminate our common stock dividend to preserve capital or in order to raise additional capital.

For more information, refer to the “Risk Management – Asset/Liability Management” section in this Report.

Adverse changes in our credit ratings could have a material adverse effect on our liquidity, cash flows, financial results and condition. Our borrowing costs and ability to obtain funding are influenced by our credit ratings. Reductions in one or more of our credit ratings could adversely affect our ability to borrow funds and raise the costs of our borrowings substantially and could cause creditors and business counterparties to raise collateral requirements or take other actions that could adversely affect our ability to raise funding. Credit ratings and credit ratings agencies’ outlooks are based on the ratings agencies’ analysis of many quantitative and qualitative factors, such as our capital adequacy, liquidity, asset quality, business mix, the level and quality of our earnings, rating agency assumptions regarding the

probability and extent of federal financial assistance or support, and other rating agency specific criteria. In addition to credit ratings, our borrowing costs are affected by various other external factors, including market volatility and concerns or perceptions about the financial services industry generally. There can be no assurance that we will maintain our credit ratings and outlooks and that credit ratings downgrades in the future would not materially affect our ability to borrow funds and borrowing costs.

Downgrades in our credit ratings also may trigger additional collateral or funding obligations which could negatively affect our liquidity, including as a result of credit-related contingent features in certain of our derivative contracts. Although a one or two notch downgrade in our current credit ratings would not be expected to trigger a material increase in our collateral or funding obligations, a more severe credit rating downgrade of our long-term and short-term credit ratings could increase our collateral or funding obligations and the effect on our liquidity could be material.

For information on our credit ratings, see the “Risk Management – Asset/Liability Management – Liquidity and Funding – Credit Ratings” section and for information regarding additional collateral and funding obligations required of certain derivative instruments in the event our credit ratings were to fall below investment grade, see Note 18 (Derivatives) to Financial Statements in this Report.

We rely on dividends from our subsidiaries for liquidity, and federal and state law, as well as certain contractual arrangements, can limit those dividends. Wells Fargo & Company, the parent holding company (the “Parent”), is a separate and distinct legal entity from its subsidiaries. It receives substantially all of its funding and liquidity from dividends and other distributions from its subsidiaries. We generally use these dividends and distributions, among other things, to pay dividends on our common and preferred stock and interest and principal on our debt. Federal and state laws limit the amount of dividends and distributions that our bank and some of our nonbank subsidiaries, including our broker-dealer subsidiaries, may pay to the Parent. In addition, under a Support Agreement dated June 28, 2017, as amended and restated on June 26, 2019, among the Parent, WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the “IHC”), Wells Fargo Bank, N.A., Wells Fargo Securities, LLC, Wells Fargo Clearing Services, LLC, and certain other direct and indirect subsidiaries of the Parent designated as material entities for resolution planning purposes or identified as related support entities in our resolution plan, the IHC may be restricted from making dividend payments to the Parent if certain liquidity and/or capital metrics fall below defined triggers or if the Parent’s board of directors authorizes it to file a case under the U.S. Bankruptcy Code. Also, our right to participate in a distribution of assets upon a subsidiary’s liquidation or reorganization is subject to the prior claims of the subsidiary’s creditors.

For more information, refer to the “Regulation and Supervision – Dividend Restrictions” and “– Holding Company Structure” sections in our 2019 Form 10-K and to Note 3 (Cash, Loan and Dividend Restrictions) and Note 29 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

RISKS RELATED TO FINANCIAL REGULATORY REFORM AND OTHER LEGISLATION AND REGULATIONS

Enacted legislation and regulation, including the Dodd-Frank Act, as well as future legislation and/or regulation, could require us to change certain of our business practices, reduce our revenue and earnings, impose additional costs on us or otherwise adversely affect our business operations and/or competitive position. Our parent company, our subsidiary banks and many of our nonbank subsidiaries such as those related to our brokerage and mutual fund businesses, are subject to significant and extensive regulation under state and federal laws in the U.S., as well as the applicable laws of the various jurisdictions outside of the U.S. where they conduct business. These regulations protect depositors, federal deposit insurance funds, consumers, investors, team members, and the banking and financial system as a whole, not necessarily our security holders. Economic, market and political conditions during the past few years have led to a significant amount of legislation and regulation in the U.S. and abroad affecting the financial services industry, as well as heightened expectations and scrutiny of financial services companies from banking regulators. These laws and regulations may continue to affect the manner in which we do business and the products and services that we provide, affect or restrict our ability to compete in our current businesses or our ability to enter into or acquire new businesses, reduce or limit our revenue in businesses or impose additional fees, assessments or taxes on us, intensify the regulatory supervision of us and the financial services industry, and adversely affect our business operations or have other negative consequences. Our businesses and revenues in non-U.S. jurisdictions are also subject to risks from political, economic and social developments in those jurisdictions, including sanctions or business restrictions, asset freezes or confiscation, unfavorable political or diplomatic developments, or financial or social instability. In addition, greater government oversight and scrutiny of financial services companies has increased our operational and compliance costs as we must continue to devote substantial resources to enhancing our procedures and controls and meeting heightened regulatory standards and expectations. Any failure to meet regulatory requirements, standards or expectations, either in the U.S. or in non-U.S. jurisdictions, could result in fees, penalties, restrictions on our ability to engage in certain business activities, or other adverse consequences.

On July 21, 2010, the Dodd-Frank Act, which, among other things, imposes significant requirements and restrictions impacting the financial services industry, became law. The Dodd-Frank Act has resulted in significant rulemaking by federal regulators, including the FRB, OCC, CFPB, FDIC, SEC and CFTC, which may continue to impact our business, including the types of products and services we can provide, the manner in which we operate our businesses, and our compliance and risk management activities. The Dodd-Frank Act, including the rules implementing its provisions and the interpretation of those rules, may continue to result in a loss of revenue, require us to change certain of our business practices, limit our ability to pursue certain business opportunities, increase our capital requirements and impose additional assessments and costs on us and otherwise adversely affect our business operations and have other negative consequences.

Our consumer businesses, including our mortgage, automobile, credit card and other consumer lending and non-lending businesses, are subject to numerous and, in many cases, highly complex consumer protection laws and regulations, as well as enhanced regulatory scrutiny and more and expanded

regulatory examinations and/or investigations. In particular, the CFPB's rules, which primarily impact our consumer businesses, may continue to increase our compliance costs and require changes in our business practices, which could limit or negatively affect the products and services that we offer our customers. If we fail to meet enhanced regulatory requirements and expectations with respect to our consumer businesses, we may be subject to increased costs, fines, penalties, restrictions on our business activities including the products and services we can provide, and/or harm to our reputation.

The Dodd-Frank Act's proposed prohibitions or limitations on proprietary trading and private fund investment activities, known as the "Volcker Rule," also may reduce our revenue. Federal banking regulators, the SEC and the CFTC jointly released a final rule to implement the Volcker Rule's restrictions, and have adopted amendments to the rule to streamline and tailor the requirements for compliance.

In addition, the Dodd-Frank Act established a comprehensive framework for regulating over-the-counter derivatives and federal regulators, including the CFTC and SEC, have adopted rules regulating swaps, security-based swaps, derivatives activities, and other broker-dealer conduct and activities. These rules may continue to negatively impact customer demand for over-the-counter derivatives, impact our ability to offer customers new derivatives or amendments to existing derivatives, and increase our costs for engaging in swaps, security-based swaps, and other derivatives activities. Moreover, these rules may impact the manner in which we conduct business with customers seeking investment advice and may affect certain investment product offerings.

We are also subject to various rules and regulations related to the prevention of financial crimes and combating terrorism, including the U.S. Patriot Act of 2001. These rules and regulations require us to, among other things, implement policies and procedures related to anti-money laundering, anti-bribery and corruption, fraud, compliance, suspicious activities, currency transaction reporting and due diligence on customers. Although we have policies and procedures designed to comply with these rules and regulations, to the extent they are not fully effective or do not meet heightened regulatory standards or expectations, we may be subject to fines, penalties, restrictions on certain activities, reputational harm, or other adverse consequences.

Our businesses are also subject to laws and regulations enacted by U.S. and non-U.S. regulators and governmental authorities relating to the privacy of the information of customers, team members and others. These laws and regulations, among other things, increase our compliance obligations; have a significant impact on our businesses' collection, processing, sharing, use, and retention of personal data and reporting of data breaches; and provide for significantly increased penalties for non-compliance.

In March 2017, we announced that the OCC had downgraded our most recent Community Reinvestment Act (CRA) rating, which covers the years 2009-2012, to "Needs to Improve" due to previously issued regulatory consent orders. A "Needs to Improve" rating imposes regulatory restrictions and limitations on certain of the Company's nonbank activities, including its ability to engage in certain nonbank mergers and acquisitions or undertake new financial in nature activities, and CRA performance is taken into account by regulators in reviewing applications to establish bank branches and for approving proposed bank mergers and acquisitions. The rating also results in the loss of expedited processing of applications to undertake certain activities, and requires the Company to receive

Risk Factors (continued)

prior regulatory approval for certain activities, including to issue or prepay certain subordinated debt obligations, open or relocate bank branches, or make certain public welfare investments. In addition, a “Needs to Improve” rating could have an impact on the Company’s relationships with certain states, counties, municipalities or other public agencies to the extent applicable law, regulation or policy limits, restricts or influences whether such entity may do business with a company that has a below “Satisfactory” rating.

In addition, we are subject to consent orders with certain of our regulators, including a February 2018 consent order with the FRB regarding the Board’s governance and oversight of the Company, and the Company’s compliance and operational risk management program. The consent order limits the Company’s total consolidated assets to the level as of December 31, 2017, until certain conditions are met. This limitation could adversely affect our results of operations or financial condition. We are also subject to April 2018 consent orders with the CFPB and OCC regarding the Company’s compliance risk management program and past practices involving certain automobile collateral protection insurance policies and certain mortgage interest rate lock extensions.

Under the April 2018 consent order with the OCC, Wells Fargo Bank, N.A., remains subject to requirements that were originally imposed in November 2016 to provide prior written notice to, and obtain non-objection from, the OCC with respect to changes in directors and senior executive officers, and remains subject to certain regulatory limitations on post-termination payments to certain individuals and employees.

The Company may be subject to further actions, including the imposition of consent orders or similar regulatory agreements or civil money penalties, by other federal regulators regarding similar issues, including the Company’s risk management policies and procedures. Compliance with the February 2018 FRB consent order, the April 2018 CFPB and OCC consent orders, and any other consent orders or regulatory actions, as well as the implementation of their requirements, may continue to increase the Company’s costs, require the Company to reallocate resources away from growing its existing businesses, and require the Company to undergo significant changes to its business, products and services. For more information on the February 2018 FRB consent order and the April 2018 CFPB and OCC consent orders, refer to the “Regulatory Matters” section in this Report.

Other future regulatory initiatives that could significantly affect our business include proposals to reform the housing finance market in the United States. These proposals, among other things, consider ending the conservatorships of the GSEs and reducing or eliminating over time the role of the GSEs in buying mortgage loans or guaranteeing mortgage-backed securities (MBS), as well as the implementation of reforms relating to borrowers, lenders, and investors in the mortgage market. Regulatory changes to limit certain products, phase in a minimum down payment requirement for borrowers, tighten underwriting standards, or change the loan types and MBS pools included in the securitization process are also possible. Congress also may consider legislation to reform the mortgage finance market in an effort to assist borrowers experiencing difficulty making mortgage payments or refinancing their mortgages. The extent and timing of any regulatory reform or the adoption of any legislation regarding the GSEs and/or the home mortgage market, as well as any effect on the Company’s business and financial results, are uncertain.

Any other future legislation and/or regulation, if adopted, also could significantly change our regulatory environment and

increase our cost of doing business, limit the activities we may pursue or affect the competitive balance among banks, savings associations, credit unions, and other financial services companies, and have a material adverse effect on our financial results and condition.

For more information on the significant regulations and regulatory oversight initiatives that have affected or may affect our business, refer to the “Regulatory Matters” section in this Report and the “Regulation and Supervision” section in our 2019 Form 10-K.

We could be subject to more stringent capital, leverage or liquidity requirements or restrictions on our growth, activities or operations if regulators determine that our resolution or recovery plan is deficient. Pursuant to rules adopted by the FRB and the FDIC, Wells Fargo has prepared and submitted a resolution plan, also known as a “living will,” that is designed to facilitate our rapid and orderly resolution in the event of material financial distress or failure. There can be no assurance that the FRB or FDIC will respond favorably to the Company’s resolution plans. If the FRB and/or FDIC determine that our resolution plan has deficiencies, they may impose more stringent capital, leverage or liquidity requirements on us or restrict our growth, activities or operations until we adequately remedy the deficiencies. If the FRB and/or FDIC ultimately determine that we have been unable to remedy any deficiencies, they could require us to divest certain assets or operations. On December 17, 2019, the FRB and FDIC announced that the Company’s 2019 resolution plan did not have any deficiencies, but they identified a specific shortcoming that would need to be addressed.

In addition to our resolution plans, we must also prepare and submit to the FRB a recovery plan that identifies a range of options that we may consider during times of idiosyncratic or systemic economic stress to remedy any financial weaknesses and restore market confidence without extraordinary government support. Our insured national bank subsidiary, Wells Fargo Bank, N.A. (the “Bank”), must also prepare and submit to the OCC a recovery plan. If either the FRB or the OCC determines that our recovery plan is deficient, they may impose fines, restrictions on our business or ultimately require us to divest assets.

Our security holders may suffer losses in a resolution of Wells Fargo, whether in a bankruptcy proceeding or under the orderly liquidation authority of the FDIC, even if creditors of our subsidiaries are paid in full. If Wells Fargo were to fail, it may be resolved in a bankruptcy proceeding or, if certain conditions are met, under the resolution regime created by the Dodd-Frank Act known as the “orderly liquidation authority.” The orderly liquidation authority allows for the appointment of the FDIC as receiver for a systemically important financial institution that is in default or in danger of default if, among other things, the resolution of the institution under the U.S. Bankruptcy Code would have serious adverse effects on financial stability in the United States. If the FDIC is appointed as receiver for the Parent, then the orderly liquidation authority, rather than the U.S. Bankruptcy Code, would determine the powers of the receiver and the rights and obligations of our security holders. The FDIC’s orderly liquidation authority requires that security holders of a company in receivership bear all losses before U.S. taxpayers are exposed to any losses, and allows the FDIC to disregard the strict priority of creditor claims under the U.S. Bankruptcy Code in certain circumstances.

The strategy described in our most recent resolution plan is a single point of entry strategy, in which the Parent would likely

be the only material legal entity to enter resolution proceedings. However, we are not obligated to maintain a single point of entry strategy, and the strategy described in our resolution plan is not binding in the event of an actual resolution of Wells Fargo, whether conducted under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority. The FDIC has announced that a single point of entry strategy may be a desirable strategy under its implementation of the orderly liquidation authority, but not all aspects of how the FDIC might exercise this authority are known and additional rulemaking is possible.

To facilitate the orderly resolution of systemically important financial institutions in case of material distress or failure, federal banking regulations require that institutions, such as Wells Fargo, maintain a minimum amount of equity and unsecured debt to absorb losses and recapitalize operating subsidiaries. Federal banking regulators have also required measures to facilitate the continued operation of operating subsidiaries notwithstanding the failure of their parent companies, such as limitations on parent guarantees, and have issued guidance encouraging institutions to take legally binding measures to provide capital and liquidity resources to certain subsidiaries in order to facilitate an orderly resolution. In response to the regulators' guidance and to facilitate the orderly resolution of the Company, on June 28, 2017, the Parent entered into a support agreement, as amended and restated on June 26, 2019 (the "Support Agreement"), with WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the "IHC"), the Bank, Wells Fargo Securities, LLC ("WFS"), Wells Fargo Clearing Services, LLC ("WFCS"), and certain other direct and indirect subsidiaries of the Parent designated as material entities for resolution planning purposes (the "Covered Entities") or identified as related support entities in our resolution plan. Pursuant to the Support Agreement, the Parent transferred a significant amount of its assets, including the majority of its cash, deposits, liquid securities and intercompany loans (but excluding its equity interests in its subsidiaries and certain other assets), to the IHC and will continue to transfer those types of assets to the IHC from time to time. In the event of our material financial distress or failure, the IHC will be obligated to use the transferred assets to provide capital and/or liquidity to the Bank, WFS, WFCS, and the Covered Entities pursuant to the Support Agreement. Under the Support Agreement, the IHC will also provide funding and liquidity to the Parent through subordinated notes and a committed line of credit, which, together with the issuance of dividends, is expected to provide the Parent, during business as usual operating conditions, with the same access to cash necessary to service its debts, pay dividends, repurchase its shares, and perform its other obligations as it would have had if it had not entered into these arrangements and transferred any assets. If certain liquidity and/or capital metrics fall below defined triggers, or if the Parent's board of directors authorizes it to file a case under the U.S. Bankruptcy Code, the subordinated notes would be forgiven, the committed line of credit would terminate, and the IHC's ability to pay dividends to the Parent would be restricted, any of which could materially and adversely impact the Parent's liquidity and its ability to satisfy its debts and other obligations, and could result in the commencement of bankruptcy proceedings by the Parent at an earlier time than might have otherwise occurred if the Support Agreement were not implemented.

Any resolution of the Company will likely impose losses on shareholders, unsecured debt holders and other creditors of the Parent, while the Parent's subsidiaries may continue to operate. Creditors of some or all of our subsidiaries may receive

significant or full recoveries on their claims, while the Parent's security holders could face significant or complete losses. This outcome may arise whether the Company is resolved under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority, and whether the resolution is conducted using a single point of entry strategy or using a multiple point of entry strategy, in which the Parent and one or more of its subsidiaries would each undergo separate resolution proceedings. Furthermore, in a single point of entry or multiple point of entry strategy, losses at some or all of our subsidiaries could be transferred to the Parent and borne by the Parent's security holders. Moreover, if either resolution strategy proved to be unsuccessful, our security holders could face greater losses than if the strategy had not been implemented.

For more information, refer to the "Regulatory Matters - 'Living Will' Requirements and Related Matters" section in this Report.

Bank regulations, including Basel capital and liquidity standards and FRB guidelines and rules, may require higher capital and liquidity levels, limiting our ability to pay common stock dividends, repurchase our common stock, invest in our business, or provide loans or other products and services to our customers. The Company and each of our insured depository institutions are subject to various regulatory capital adequacy requirements administered by federal banking regulators. In particular, the Company is subject to rules issued by federal banking regulators to implement Basel III capital requirements for U.S. banking organizations. These capital rules, among other things, establish required minimum ratios relating capital to different categories of assets and exposures. Federal banking regulators have also finalized rules to impose a supplementary leverage ratio on large BHCs like Wells Fargo and our insured depository institutions. The FRB has also finalized rules to address the amount of equity and unsecured long-term debt a U.S. G-SIB must hold to improve its resolvability and resiliency, often referred to as total loss absorbing capacity (TLAC). Similarly, federal banking regulators have issued a final rule that implements a liquidity coverage ratio.

In addition, as part of its obligation to impose enhanced capital and risk-management standards on large financial firms pursuant to the Dodd-Frank Act, the FRB issued a final capital plan rule that requires large BHCs, including the Company, to submit annual capital plans for review and to obtain regulatory approval before making capital distributions. There can be no assurance that the FRB would respond favorably to the Company's future capital plans. The FRB has also finalized a number of regulations implementing enhanced prudential requirements for large BHCs like Wells Fargo regarding risk-based capital and leverage, risk and liquidity management, and imposing debt-to-equity limits on any BHC that regulators determine poses a grave threat to the financial stability of the United States. The FRB and OCC have also finalized rules implementing stress testing requirements for large BHCs and national banks. The FRB has also finalized enhanced prudential standards that implement single counterparty credit limits, and has proposed a rule to establish remediation requirements for large BHCs experiencing financial distress. The OCC, under separate authority, has also established heightened governance and risk management standards for large national banks, such as Wells Fargo Bank, N.A.

The Basel standards and federal regulatory capital and liquidity requirements may limit or otherwise restrict how we utilize our capital, including common stock dividends and stock repurchases, and may require us to increase our capital and/or

Risk Factors (continued)

liquidity. Any requirement that we increase our regulatory capital, regulatory capital ratios or liquidity, including as a result of business growth, acquisitions or a change in our risk profile, could require us to liquidate assets or otherwise change our business, product offerings and/or investment plans, which may negatively affect our financial results. Although not currently anticipated, proposed capital requirements and/or our regulators may require us to raise additional capital in the future. Issuing additional common stock may dilute the ownership of existing stockholders. In addition, federal banking regulations may continue to increase our compliance costs as well as limit our ability to invest in our business or provide loans or other products and services to our customers.

For more information, refer to the “Capital Management,” “Risk Management – Asset/Liability Management – Liquidity and Funding – Liquidity Standards,” and “Regulatory Matters” sections in this Report and the “Regulation and Supervision” section in our 2019 Form 10-K.

FRB policies, including policies on interest rates, can significantly affect business and economic conditions and our financial results and condition. The FRB regulates the supply of money in the United States. Its policies determine in large part our cost of funds for lending and investing and the return we earn on those loans and investments, both of which affect our net interest income and net interest margin. The FRB’s interest rate policies also can materially affect the value of financial instruments we hold, such as debt securities and MSRs. In addition, its policies can affect our borrowers, potentially increasing the risk that they may fail to repay their loans. Changes in FRB policies, including its target range for the federal funds rate or actions taken to increase or decrease the size of its balance sheet, are beyond our control and can be hard to predict. The FRB has stated that in determining the timing and size of any adjustments to the target range for the federal funds rate, the FRB will assess realized and expected economic conditions relative to its objectives of maximum employment and 2% inflation. As noted above, a declining or low interest rate environment and a flattening yield curve which may result from the FRB’s actions could negatively affect our net interest income and net interest margin as it may result in us holding lower yielding loans and debt securities on our balance sheet.

CREDIT RISK

As one of the largest lenders in the U.S., increased credit risk, including as a result of a deterioration in economic conditions or changes in market conditions, could require us to increase our provision for credit losses and allowance for credit losses and could have a material adverse effect on our results of operations and financial condition. When we loan money or commit to loan money we incur credit risk, or the risk of losses if our borrowers do not repay their loans. As one of the largest lenders in the U.S., the credit performance of our loan portfolios significantly affects our financial results and condition. As noted above, if the current economic environment were to deteriorate, more of our customers may have difficulty in repaying their loans or other obligations which could result in a higher level of credit losses and provision for credit losses. We reserve for credit losses by establishing an allowance through a charge to earnings. The amount of this allowance is based on our assessment of credit losses inherent in our loan portfolio (including unfunded credit commitments). The process for determining the amount of the allowance is critical to our financial results and condition. It requires difficult, subjective and complex judgments about the

future, including forecasts of economic or market conditions that might impair the ability of our borrowers to repay their loans. We might increase the allowance because of changing economic conditions, including falling home prices and higher unemployment, significant loan growth, changes in consumer behavior or other market conditions that adversely affect borrowers, or other factors. Additionally, the regulatory environment or external factors, such as natural disasters, disease pandemics, or political or social matters, also can influence recognition of credit losses in our loan portfolios and impact our allowance for credit losses.

Future allowance levels may increase or decrease based on a variety of factors, including loan growth, portfolio performance and general economic conditions. While we believe that our allowance for credit losses was appropriate at December 31, 2019, there is no assurance that it will be sufficient to cover future credit losses, especially if housing and employment conditions worsen. In the event of significant deterioration in economic conditions or if we experience significant loan growth, we may be required to build reserves in future periods, which would reduce our earnings.

For more information, refer to the “Risk Management – Credit Risk Management” and “Critical Accounting Policies – Allowance for Credit Losses” sections in this Report.

We may have more credit risk and higher credit losses to the extent our loans are concentrated by loan type, industry segment, borrower type, or location of the borrower or collateral. Our credit risk and credit losses can increase if our loans are concentrated to borrowers engaged in the same or similar activities or to borrowers who individually or as a group may be uniquely or disproportionately affected by economic or market conditions. Similarly, challenging economic or market conditions, or trade policies, affecting a particular industry or geography may also impact related or dependent industries or the ability of borrowers living in such affected areas or working in such industries to meet their financial obligations. We experienced the effect of concentration risk in 2009 and 2010 when we incurred greater than expected losses in our residential real estate loan portfolio due to a housing slowdown and greater than expected deterioration in residential real estate values in many markets, including the Central Valley California market and several Southern California metropolitan statistical areas. As California is our largest banking state in terms of loans and deposits, deterioration in real estate values and underlying economic conditions in those markets or elsewhere in California could result in materially higher credit losses. In addition, changes in consumer behavior or other market conditions, such as in response to climate change and other environmental and sustainability concerns, may adversely affect borrowers in certain industries or sectors, which may increase our credit risk and reduce the demand by these borrowers for our products and services. Moreover, deterioration in macro-economic conditions generally across the country could result in materially higher credit losses, including for our residential real estate loan portfolio, which includes nonconforming mortgage loans we retain on our balance sheet. We may experience higher delinquencies and higher loss rates as our consumer real estate secured lines of credit reach their contractual end of draw period and begin to amortize.

We are currently one of the largest CRE lenders in the U.S. A deterioration in economic conditions that negatively affects the business performance of our CRE borrowers, including increases in interest rates, declines in commercial property values, and/or changes in consumer behavior or other market conditions, could

result in materially higher credit losses and have a material adverse effect on our financial results and condition.

Challenges and/or changes in non-U.S. economic conditions may increase our non-U.S. credit risk. Our non-U.S. loan exposure represented approximately 8% of our total consolidated outstanding loans and 4% of our total assets at December 31, 2019. Economic difficulties in non-U.S. jurisdictions could also indirectly have a material adverse effect on our credit performance and results of operations and financial condition to the extent they negatively affect the U.S. economy and/or our borrowers who have non-U.S. operations.

Due to regulatory requirements, we must clear certain derivative transactions through central counterparty clearinghouses (CCPs), which results in credit exposure to these CCPs. Similarly, because we are a member of various CCPs, we may be required to pay a portion of any losses incurred by the CCP in the event that one or more members of the CCP defaults on its obligations. In addition, we are exposed to the risk of non-performance by our clients for which we clear transactions through CCPs to the extent such non-performance is not sufficiently covered by available collateral.

In order to reduce credit risk and obtain additional funding, from time to time we may securitize or sell similar types or categories of loans that we originate, such as mortgage loans and automobile loans. The agreements under which we do this generally contain various representations and warranties regarding the origination and characteristics of the loans. We may be required to repurchase the loans, reimburse investors and others, or incur other losses, including regulatory fines and penalties, as a result of any breaches in these contractual representations and warranties. For more information about our repurchase obligations with respect to mortgage loans, refer to the “Risk Factors – Risks Related to Our Mortgage Business” section in this Report.

For more information regarding credit risk, refer to the “Risk Management – Credit Risk Management” section and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

OPERATIONAL AND LEGAL RISK

A failure in or breach of our operational or security systems, controls or infrastructure, or those of our third-party vendors and other service providers, could disrupt our businesses, damage our reputation, increase our costs and cause losses. As a large financial institution that serves customers through numerous physical locations, ATMs, the internet, mobile banking and other distribution channels across the U.S. and internationally, we depend on our ability to process, record and monitor a large number of customer transactions on a continuous basis. As our customer base and locations have expanded throughout the U.S. and internationally, as we have increasingly used the internet and mobile banking to provide products and services to our customers, and as customer, public, legislative and regulatory expectations regarding operational and information security have increased, our operational systems, controls and infrastructure must continue to be safeguarded and monitored for potential failures, disruptions and breakdowns. Our business, financial, accounting, data processing systems or other operating systems and facilities may stop operating properly, become insufficient based on our evolving business needs, or become disabled or damaged as a result of a number of factors including events that are wholly or partially beyond our control. For example, there could be sudden increases in customer transaction volume; electrical or telecommunications

outages; degradation or loss of internet, website or mobile banking availability; climate change related impacts and natural disasters such as earthquakes, tornados, and hurricanes; disease pandemics; events arising from local or larger scale political or social matters, including terrorist acts; and, as described below, cyber attacks or other information security breaches. Furthermore, enhancements and upgrades to our infrastructure or operating systems may be time-consuming, entail significant costs, and create risks associated with implementing new systems and integrating them with existing ones. Due to the complexity and interconnectedness of our systems, the process of enhancing our infrastructure and operating systems, including their security measures and controls, can itself create a risk of system disruptions and security issues. Similarly, we may not be able to timely recover critical business processes or operations that have been disrupted, which may further increase any associated costs and consequences of such disruptions. Although we have business continuity plans and other safeguards in place to help provide operational resiliency, our business operations may be adversely affected by significant and widespread disruption to our physical infrastructure or operating systems that support our businesses and customers. For example, on February 7, 2019, we experienced system issues caused by an automatic power shutdown at one of our main data center facilities. Although applications and related workloads were systematically re-routed to back-up data centers throughout the day, certain of our services, including our online and mobile banking systems, certain mortgage origination systems, and certain ATM functions, experienced disruptions that delayed service to our customers.

As a result of financial institutions and technology systems becoming more interconnected and complex, any operational incident at a third party may increase the risk of loss or material impact to us or the financial industry as a whole. Furthermore, third parties on which we rely, including those that facilitate our business activities or to which we outsource operations, such as exchanges, clearing houses, financial intermediaries or vendors that provide services or security solutions for our operations, could also be sources of operational risk to us, including from information breaches or loss, breakdowns, disruptions or failures of their own systems or infrastructure, or any deficiencies in the performance of their responsibilities. We are also exposed to the risk that a disruption or other operational incident at a common service provider to those third parties could impede their ability to provide services or perform their responsibilities for us. In addition, we must meet regulatory requirements and expectations regarding our use of third-party service providers, and any failure by our third-party service providers to meet their obligations to us or to comply with applicable laws, rules, regulations, or Wells Fargo policies could result in fines, penalties, restrictions on our business, or other negative consequences.

Disruptions or failures in the physical infrastructure, controls or operating systems that support our businesses and customers, failures of the third parties on which we rely to adequately or appropriately provide their services or perform their responsibilities, or our failure to effectively manage or oversee our third-party relationships, could result in business disruptions, loss of revenue or customers, legal or regulatory proceedings, compliance and other costs, violations of applicable privacy and other laws, reputational damage, or other adverse consequences, any of which could materially adversely affect our results of operations or financial condition.

Risk Factors (continued)

A cyber attack or other information security breach of our technologies, computer systems or networks, or those of our third-party vendors and other service providers, could disrupt our businesses, result in the disclosure or misuse of confidential or proprietary information, damage our reputation, increase our costs and cause losses.

Information security risks for large financial institutions such as Wells Fargo have generally increased in recent years in part because of the proliferation of new technologies, the use of the internet, mobile devices, and cloud technologies to conduct financial transactions, and the increased sophistication and activities of organized crime, hackers, terrorists, activists, and other external parties, including foreign state-sponsored parties. Those parties also may continue to attempt to misrepresent personal or financial information to obtain loans or other financial products from us or attempt to fraudulently induce employees, customers, or other users of our systems to disclose confidential information in order to gain access to our data or that of our customers. As noted above, our operations rely on the secure processing, transmission and storage of confidential information in our computer systems and networks. Our banking, brokerage, investment advisory, and capital markets businesses rely on our digital technologies, computer and email systems, software, hardware, and networks to conduct their operations. In addition, to access our products and services, our customers may use personal smartphones, tablets, and other mobile devices that are beyond our control systems. Although we believe we have robust information security procedures and controls, our technologies, systems, networks, and our customers' devices may become the target of cyber attacks or other information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of Wells Fargo's or our customers' confidential, proprietary and other information, or otherwise disrupt Wells Fargo's or its customers' or other third parties' business operations. For example, various retailers have reported they were victims of cyber attacks in which large amounts of their customers' data, including debit and credit card information, was obtained. In these situations, we generally incur costs to replace compromised cards and address fraudulent transaction activity affecting our customers. We are also exposed to the risk that a team member or other person acting on behalf of the Company fails to comply with applicable policies and procedures and inappropriately circumvents controls for personal gain or other improper purposes.

Due to the increasing interconnectedness and complexity of financial institutions and technology systems, an information security incident at a third party may increase the risk of loss or material impact to us or the financial industry as a whole. In addition, third parties on which we rely, including those that facilitate our business activities or to which we outsource operations, such as internet, mobile technology and cloud service providers, could be sources of information security risk to us. If those third parties fail to adequately or appropriately safeguard their technologies, systems, and networks, we may suffer material harm, including business disruptions, losses or remediation costs, reputational damage, legal or regulatory proceedings, or other adverse consequences.

To date we have not experienced any material losses relating to cyber attacks or other information security breaches, but there can be no assurance that we will not suffer such losses in the future. Our risk and exposure to these matters remains heightened because of, among other things, the evolving nature of these threats, the prominent size and scale of Wells Fargo and its role in the financial services industry, our plans to continue to implement our digital and mobile banking channel strategies and

develop additional remote connectivity solutions to serve our customers when and how they want to be served, our expanded geographic footprint and international presence, the outsourcing of some of our business operations, and the current global economic and political environment. For example, Wells Fargo and other financial institutions continue to be the target of various evolving and adaptive cyber attacks, including malware and denial-of-service, as part of an effort to disrupt the operations of financial institutions, potentially test their cybersecurity capabilities, commit fraud, or obtain confidential, proprietary or other information. Cyber attacks have also focused on targeting online applications and services, such as online banking, as well as cloud-based services provided by third parties, and have targeted the infrastructure of the internet, causing the widespread unavailability of websites and degrading website performance. As a result, information security and the continued development and enhancement of our controls, processes and systems designed to protect our networks, computers, software and data from attack, damage or unauthorized access remain a priority for Wells Fargo. We are also proactively involved in industry cybersecurity efforts and working with other parties, including our third-party service providers and governmental agencies, to continue to enhance defenses and improve resiliency to cybersecurity and other information security threats. As these threats continue to evolve, we may continue to be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities or incidents. Because the investigation of any information security breach is inherently unpredictable and would require time to complete, we may not be able to immediately address the consequences of a breach, which may further increase any associated costs and consequences. Moreover, to the extent our insurance covers aspects of information security risk, such insurance may not be sufficient to cover all losses associated with an information security breach.

Cyber attacks or other information security breaches affecting us or third parties on which we rely, including those that facilitate our business activities or to which we outsource operations, or security breaches of the networks, systems or devices that our customers use to access our products and services, could result in business disruptions, loss of revenue or customers, legal or regulatory proceedings, compliance and other costs, violations of applicable privacy and other laws, reputational damage, or other adverse consequences, any of which could materially adversely affect our results of operations or financial condition.

Our framework for managing risks may not be fully effective in mitigating risk and loss to us.

Our risk management framework seeks to mitigate risk and loss to us. We have established processes and procedures intended to identify, measure, monitor, report and analyze the types of risk to which we are subject, including liquidity risk, credit risk, market risk, interest rate risk, operational risk, legal and compliance risk, and reputational risk, among others. However, as with any risk management framework, there are inherent limitations to our risk management strategies as there may exist, or develop in the future, risks that we have not appropriately anticipated, identified or managed. Our risk management framework is also dependent on ensuring that effective operational controls and a sound culture exist throughout the Company. The inability to develop effective operational controls or to foster the appropriate culture in each of our lines of business, including the inability to align performance management and compensation to

achieve the desired culture, could adversely impact the effectiveness of our risk management framework. Similarly, if we are unable to effectively manage our business or operations, we may be exposed to increased risks or unexpected losses. We are also exposed to risks if we do not accurately or completely execute a process or transaction, whether due to human error or otherwise, or if a team member fails to comply with applicable policies and procedures or inappropriately circumvents controls. In certain instances, we rely on models to measure, monitor and predict risks, such as market and interest rate risks, as well as to help inform business decisions; however, there is no assurance that these models will appropriately or sufficiently capture all relevant risks or accurately predict future events or exposures. Furthermore, certain of our models are subject to regulatory review and approval, and any failure to meet regulatory standards or expectations could result in fines, penalties, restrictions on our ability to engage in certain business activities, or other adverse consequences, and any required modifications or changes to these models can impact our capital ratios and requirements and result in increased operational and compliance costs. In addition, we rely on data to aggregate and assess our various risk exposures and business activities, and any issues with the quality or effectiveness of our data, including our aggregation, management, and validation procedures, could result in ineffective risk management practices, business decisions or customer service, inefficient use of resources, or inaccurate regulatory or other risk reporting. We also use artificial intelligence to help further inform our business decisions and risk management practices, but there is no assurance that artificial intelligence will appropriately or sufficiently replicate certain outcomes or accurately predict future events or exposures. The recent financial and credit crisis and resulting regulatory reform highlighted both the importance and some of the limitations of managing unanticipated risks, and our regulators remain focused on ensuring that financial institutions build and maintain robust risk management policies and practices. If our risk management framework proves ineffective, we could suffer unexpected losses which could materially adversely affect our results of operations or financial condition.

Risks related to sales practices and other instances where customers may have experienced financial harm. Various government entities and offices have undertaken formal or informal inquiries, investigations or examinations arising out of certain sales practices of the Company that were the subject of settlements with the CFPB, the Office of the Comptroller of the Currency, and the Office of the Los Angeles City Attorney announced by the Company on September 8, 2016. In addition to imposing monetary penalties and other sanctions, regulatory authorities may require admissions of wrongdoing and compliance with other conditions in connection with such matters, which can lead to restrictions on our ability to engage in certain business activities or offer certain products or services, limitations on our ability to access capital markets, limitations on capital distributions, the loss of customers, and/or other direct and indirect adverse consequences. A number of lawsuits have also been filed by non-governmental parties seeking damages or other remedies related to these sales practices. The ultimate resolution of any of these pending legal proceedings or government investigations, depending on the sanctions and remedy sought and granted, could materially adversely affect our results of operations and financial condition. We may continue to incur additional costs and expenses in order to address and defend these pending legal proceedings and government

investigations, and we may continue to have increased compliance and other costs related to these matters. Furthermore, negative publicity or public opinion resulting from these matters may increase the risk of reputational harm to our business, which can impact our ability to keep and attract customers, affect our ability to attract and retain qualified team members, result in the loss of revenue, or have other material adverse effects on our results of operations and financial condition.

Furthermore, our priority of rebuilding trust has included an ongoing effort to identify other areas or instances where customers may have experienced financial harm. For example, we have identified certain issues related to past practices involving certain automobile collateral protection insurance policies and certain issues related to the unused portion of guaranteed automobile protection waiver or insurance agreements. The identification of such other areas or instances where customers may have experienced financial harm could lead to, and in some cases has already resulted in, additional remediation costs, loss of revenue or customers, legal or regulatory proceedings, compliance and other costs, reputational damage, or other adverse consequences.

For more information, refer to the “Overview – Retail Sales Practices Matters” and “– Other Customer Remediation Activities” sections and Note 17 (Legal Actions) to Financial Statements in this Report.

We may incur fines, penalties and other negative consequences from regulatory violations, possibly even inadvertent or unintentional violations, or from any failure to meet regulatory standards or expectations. We maintain systems and procedures designed to ensure that we comply with applicable laws and regulations. However, we are subject to heightened compliance and regulatory oversight and expectations, particularly due to the evolving and increasing regulatory landscape we operate in. We are also subject to consent orders with regulators that subject us to various conditions and restrictions. In addition, a single event or issue may give rise to numerous and overlapping investigations and proceedings, either by multiple federal and state agencies in the U.S. or by multiple regulators and other governmental entities in different jurisdictions. Also, the laws and regulations in jurisdictions in which we operate may be different or even conflict with each other, such as differences between U.S. federal and state law or differences between U.S. and non-U.S. laws as to the products and services we may offer or other business activities we may engage in, which can lead to compliance difficulties or issues. Furthermore, many legal and regulatory regimes require us to report transactions and other information to regulators and other governmental authorities, self-regulatory organizations, exchanges, clearing houses and customers. We may be subject to fines, penalties, restrictions on our business, or other negative consequences if we do not timely, completely, or accurately provide regulatory reports, customer notices or disclosures. Moreover, some legal/regulatory frameworks provide for the imposition of fines or penalties for noncompliance even though the noncompliance was inadvertent or unintentional and even though there was in place at the time systems and procedures designed to ensure compliance. For example, we are subject to regulations issued by the Office of Foreign Assets Control (OFAC) that prohibit financial institutions from participating in the transfer of property belonging to the governments of certain non-U.S. countries and designated nationals of those countries. OFAC may impose penalties or restrictions on certain activities for inadvertent or unintentional

Risk Factors (continued)

violations even if reasonable processes are in place to prevent the violations. Any violation of these or other applicable laws or regulatory requirements, even if inadvertent or unintentional, or any failure to meet regulatory standards or expectations, including any failure to satisfy the conditions of any consent orders, could result in fees, penalties, restrictions on our ability to engage in certain business activities, reputational harm, loss of customers or other negative consequences.

Reputational harm, including as a result of our actual or alleged conduct or public opinion of the financial services industry generally, could adversely affect our business, results of operations, and financial condition. Reputation risk, or the risk to our business, earnings and capital from negative public opinion, is inherent in our business and has increased substantially because of the financial crisis, our size and profile in the financial services industry, and sales practices related matters and other instances where customers may have experienced financial harm. Negative public opinion about the financial services industry generally or Wells Fargo specifically could adversely affect our reputation and our ability to keep and attract customers. Negative public opinion could result from our actual or alleged conduct in any number of activities, including sales practices; mortgage, automobile or other consumer lending practices; loan origination or servicing activities; mortgage foreclosure actions; management of client accounts or investments; lending, investing or other business relationships; identification and management of potential conflicts of interest from transactions, obligations and interests with and among our customers; corporate governance; regulatory compliance; risk management; incentive compensation practices; and disclosure, sharing or inadequate protection or improper use of customer information, and from actions taken by government regulators and community or other organizations in response to that conduct. Although we have policies and procedures in place intended to detect and prevent conduct by team members and third-party service providers that could potentially harm customers or our reputation, there is no assurance that such policies and procedures will be fully effective in preventing such conduct. Furthermore, our actual or perceived failure to address or prevent any such conduct or otherwise to effectively manage our business or operations could result in significant reputational harm. In addition, because we conduct most of our businesses under the “Wells Fargo” brand, negative public opinion about one business also could affect our other businesses. Moreover, actions by the financial services industry generally or by certain members or individuals in the industry also can adversely affect our reputation. The proliferation of social media websites utilized by Wells Fargo and other third parties, as well as the personal use of social media by our team members and others, including personal blogs and social network profiles, also may increase the risk that negative, inappropriate or unauthorized information may be posted or released publicly that could harm our reputation or have other negative consequences, including as a result of our team members interacting with our customers in an unauthorized manner in various social media outlets.

Wells Fargo and other financial institutions have been targeted from time to time by protests and demonstrations, which have included disrupting the operation of our retail banking locations and have resulted in negative public commentary about financial institutions, including the fees charged for various products and services. Wells Fargo and other financial institutions have also been subject to negative publicity as a result of providing financial services to or making investments in industries or organizations subject to stakeholder

concerns. There can be no assurance that continued protests or negative public opinion of the Company specifically or large financial institutions generally will not harm our reputation and adversely affect our business, results of operations, and financial condition.

Risks related to legal actions. Wells Fargo and some of its subsidiaries are involved in judicial, regulatory, governmental, arbitration, and other proceedings or investigations concerning matters arising from the conduct of our business activities, and many of those proceedings and investigations expose Wells Fargo to potential financial loss. Although we believe we have a meritorious defense in all significant legal actions pending against us, there can be no assurance as to the ultimate outcome. We establish accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. We may still incur costs for a legal action even if we have not established an accrual. In addition, the actual cost of resolving a legal action may be substantially higher than any amounts accrued for that action. The ultimate resolution of a pending legal proceeding or investigation, depending on the remedy sought and granted, could materially adversely affect our results of operations and financial condition.

As noted above, we are subject to heightened regulatory oversight and scrutiny, which may lead to regulatory investigations, proceedings or enforcement actions. In addition to imposing monetary penalties and other sanctions, regulatory authorities may require criminal pleas or other admissions of wrongdoing and compliance with other conditions in connection with settling such matters, which can lead to reputational harm, loss of customers, restrictions on the ability to access capital markets, limitations on capital distributions, the inability to engage in certain business activities or offer certain products or services, and/or other direct and indirect adverse effects.

For more information, refer to Note 17 (Legal Actions) to Financial Statements in this Report.

RISKS RELATED TO OUR MORTGAGE BUSINESS

Our mortgage banking revenue can be volatile from quarter to quarter, including from the impact of changes in interest rates on our origination activity and on the value of our MSRs, MLHFS and associated economic hedges, and we rely on the GSEs to purchase our conforming loans to reduce our credit risk and provide liquidity to fund new mortgage loans. We are one of the largest mortgage originators and residential mortgage servicers in the U.S., and we earn revenue from fees we receive for originating mortgage loans and for servicing mortgage loans. As a result of our mortgage servicing business, we have a sizable portfolio of MSRs, which we initially measure and carry using the fair value measurement method. Fair value is the present value of estimated future net servicing income, calculated based on a number of variables, including assumptions about the likelihood of prepayment by borrowers. Changes in interest rates can affect prepayment assumptions and thus fair value. When interest rates fall, borrowers are usually more likely to prepay their mortgage loans by refinancing them at a lower rate. As the likelihood of prepayment increases, the fair value of our MSRs can decrease. Each quarter we evaluate the fair value of our MSRs, and any decrease in fair value reduces earnings in the period in which the decrease occurs. We also measure at fair value MLHFS for which an active secondary market and readily available market prices exist. In addition, we measure at fair value certain other interests we hold related to residential loan sales

and securitizations. Similar to other interest-bearing securities, the value of these MLHFS and other interests may be negatively affected by changes in interest rates. For example, if market interest rates increase relative to the yield on these MLHFS and other interests, their fair value may fall.

When rates rise, the demand for mortgage loans usually tends to fall, reducing the revenue we receive from loan originations. Under the same conditions, revenue from our MSRs can increase through increases in fair value. When rates fall, mortgage originations usually tend to increase and the value of our MSRs usually tends to decline, also with some offsetting revenue effect. Even though they can act as a “natural hedge,” the hedge is not perfect, either in amount or timing. For example, the negative effect on revenue from a decrease in the fair value of residential MSRs is generally immediate, but any offsetting revenue benefit from more originations and the MSRs relating to the new loans would generally accrue over time. It is also possible that, because of economic conditions and/or a weak or deteriorating housing market, even if interest rates were to fall or remain low, mortgage originations may also fall or any increase in mortgage originations may not be enough to offset the decrease in the MSRs value caused by the lower rates.

We typically use derivatives and other instruments to hedge our mortgage banking interest rate risk. We may not hedge all of our risk, and we may not be successful in hedging any of the risk. Hedging is a complex process, requiring sophisticated models and constant monitoring, and is not a perfect science. We may use hedging instruments that may not perfectly correlate with the value or income being hedged. We could incur significant losses from our hedging activities. There may be periods where we elect not to use derivatives and other instruments to hedge mortgage banking interest rate risk.

We rely on the GSEs to purchase mortgage loans that meet their conforming loan requirements and on the Federal Housing Authority (FHA) to insure loans that meet their policy requirements. In order to meet customer needs, we also originate loans that do not conform to either the GSEs or FHA standards, which are referred to as “nonconforming” loans. We generally retain these nonconforming loans on our balance sheet. When we retain a loan on our balance sheet not only do we keep the credit risk of the loan but we also do not receive any sale proceeds that could be used to generate new loans. If we were unable or unwilling to retain nonconforming loans on our balance sheet, whether due to regulatory, business or other reasons, our ability to originate new nonconforming loans may be reduced, thereby reducing the interest income we could earn from these loans. Similarly, if the GSEs or FHA were to limit or reduce their purchases or insuring of loans, our ability to fund, and thus originate new mortgage loans, could also be reduced. We cannot assure that the GSEs or FHA will not materially limit their purchases or insuring of conforming loans or change their criteria for what constitutes a conforming loan (e.g., maximum loan amount or borrower eligibility). Each of the GSEs is currently in conservatorship, with its primary regulator, the Federal Housing Finance Agency (FHFA) acting as conservator. While the FHFA has stated that it intends to end the conservatorship, we cannot predict if, when or precisely how the conservatorship will end, or any associated changes to the GSEs business structure and operations that could result. As noted above, there are various proposals to reform the housing finance market in the U.S., including the role of the GSEs in the housing finance market. The impact of any such regulatory reform regarding the housing finance market and the GSEs, including any changes to the GSE’s structure, capital requirements, or market presence, as well as

any effect on the Company’s business and financial results, are uncertain.

For more information, refer to the “Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk,” “Critical Accounting Policies – Valuation of Residential Mortgage Servicing Rights” and “Critical Accounting Policies – Fair Value of Financial Instruments” sections in this Report.

We may be required to repurchase mortgage loans or reimburse investors and others as a result of breaches in contractual representations and warranties, and we may incur other losses as a result of real or alleged violations of statutes or regulations applicable to the origination of our residential mortgage loans. We often sell residential mortgage loans that

we originate to various parties, including GSEs, SPEs that issue private label MBS, and other financial institutions that purchase mortgage loans for investment or private label securitization. We may also pool FHA-insured and VA-guaranteed mortgage loans which back securities guaranteed by GNMA. The agreements under which we sell mortgage loans and the insurance or guaranty agreements with the FHA and VA contain various representations and warranties regarding the origination and characteristics of the mortgage loans. We may be required to repurchase mortgage loans, indemnify the securitization trust, investor or insurer, or reimburse the securitization trust, investor or insurer for credit losses incurred on loans in the event of a breach of contractual representations or warranties that is not remedied within a period (usually 90 days or less) after we receive notice of the breach. We establish a mortgage repurchase liability related to the various representations and warranties that reflect management’s estimate of losses for loans which we have a repurchase obligation. Because the level of mortgage loan repurchase losses depends upon economic factors, investor demand strategies and other external conditions that may change over the life of the underlying loans, the level of the liability for mortgage loan repurchase losses is difficult to estimate, requires considerable management judgment, and is subject to change. If economic conditions or the housing market worsen or future investor repurchase demand and our success at appealing repurchase requests differ from past experience, we could have increased repurchase obligations and increased loss severity on repurchases, requiring significant additions to the repurchase liability.

Additionally, for residential mortgage loans that we originate, borrowers may allege that the origination of the loans did not comply with applicable laws or regulations in one or more respects and assert such violation as an affirmative defense to payment or to the exercise by us of our remedies, including foreclosure proceedings, or in an action seeking statutory and other damages in connection with such violation. If we are not successful in demonstrating that the loans in dispute were originated in accordance with applicable statutes and regulations, we could become subject to monetary damages and other civil penalties, including the loss of certain contractual payments or the inability to exercise certain remedies under the loans.

For more information, refer to the “Risk Management – Credit Risk Management – Liability for Mortgage Loan Repurchase Losses” section in this Report.

Risk Factors (continued)

We may be terminated as a servicer or master servicer, be required to repurchase a mortgage loan or reimburse investors for credit losses on a mortgage loan, or incur costs, liabilities, fines and other sanctions if we fail to satisfy our servicing obligations, including our obligations with respect to mortgage loan foreclosure actions. We act as servicer and/or master servicer for mortgage loans included in securitizations and for unsecuritized mortgage loans owned by investors. As a servicer or master servicer for those loans we have certain contractual obligations to the securitization trusts, investors or other third parties, including certain foreclosure obligations or, if applicable, considering alternatives to foreclosure such as loan modifications or short-sales, as well as certain servicing obligations for properties that fall within a flood zone. If we fail to satisfy our servicing obligations, we may face a number of consequences, including termination as servicer or master servicer, requirements to indemnify the securitization trustee against losses from any failure by us to perform our servicing obligations, and/or contractual obligations to repurchase a mortgage loan or reimburse investors for credit losses, any of which could significantly reduce our net servicing income.

We may incur costs, liabilities to borrowers, title insurers and/or securitization investors, legal proceedings, or other adverse consequences if we fail to meet our obligations with respect to mortgage foreclosure actions or we experience delays in the foreclosure process. Our net servicing income and the fair value of our MSRs may be negatively affected to the extent our servicing costs increase because of higher foreclosure or other servicing related costs. We may be subject to fines and other sanctions imposed by federal or state regulators as a result of actual or perceived deficiencies in our mortgage servicing practices, including with respect to our foreclosure practices or our servicing of flood zone properties. Any of these actions may harm our reputation, negatively affect our residential mortgage origination or servicing business, or result in material fines, penalties, equitable remedies, or other enforcement actions.

For more information, refer to the “Risk Management – Credit Risk Management – Liability for Mortgage Loan Repurchase Losses” and “– Risks Relating to Servicing Activities,” and “Critical Accounting Policies – Valuation of Residential Mortgage Servicing Rights” sections and Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments) and Note 17 (Legal Actions) to Financial Statements in this Report.

RISKS RELATED TO OUR INDUSTRY'S COMPETITIVE OPERATING ENVIRONMENT

We face significant and increasing competition in the rapidly evolving financial services industry. We compete with other financial institutions in a highly competitive industry that is undergoing significant changes as a result of financial regulatory reform, technological advances, increased public scrutiny stemming from the financial crisis, and current economic conditions. Our success depends on our ability to develop and maintain deep and enduring relationships with our customers based on the quality of our customer service, the wide variety of products and services that we can offer our customers and the ability of those products and services to satisfy our customers' needs and preferences, the pricing of our products and services, the extensive distribution channels available for our customers, our innovation, and our reputation. Continued or increased competition in any one or all of these areas may negatively affect our customer relationships, market share and results of operations and/or cause us to increase our capital investment in our businesses in order to remain competitive. In addition, our

ability to reposition or reprice our products and services from time to time may be limited and could be influenced significantly by the current economic, regulatory and political environment for large financial institutions as well as by the actions of our competitors. Furthermore, any changes in the types of products and services that we offer our customers and/or the pricing for those products and services could result in a loss of customer relationships and market share and could materially adversely affect our results of operations.

Continued technological advances and the growth of e-commerce have made it possible for non-depository institutions to offer products and services that traditionally were banking products, and for financial institutions and other companies to provide electronic and internet-based financial solutions, including electronic securities trading, lending and payment solutions. In addition, technological advances, including digital currencies, may diminish the importance of depository institutions and other financial intermediaries in the transfer of funds between parties. We may not respond effectively to these and other competitive threats from existing and new competitors and may be forced to sell products at lower prices, increase our investment in our business to modify or adapt our existing products and services, and/or develop new products and services to respond to our customers' needs and preferences. To the extent we are not successful in developing and introducing new products and services or responding or adapting to the competitive landscape or to changes in customer preferences, we may lose customer relationships and our revenue growth and results of operations may be materially adversely affected.

Our ability to attract and retain qualified team members is critical to the success of our business and failure to do so could adversely affect our business performance, competitive position and future prospects. The success of Wells Fargo is heavily dependent on the talents and efforts of our team members, including our senior leaders, and in many areas of our business, including commercial banking, brokerage, investment advisory, capital markets, risk management and technology, the competition for highly qualified personnel is intense. We also seek to retain a pipeline of team members to provide continuity of succession for our senior leadership positions. In order to attract and retain highly qualified team members, we must provide competitive compensation and effectively manage team member performance and development. As a large financial institution and additionally to the extent we remain subject to consent orders we may be subject to limitations on compensation by our regulators that may adversely affect our ability to attract and retain these qualified team members, especially if some of our competitors may not be subject to these same compensation limitations. If we are unable to continue to attract and retain qualified team members, including successors for senior leadership positions, our business performance, competitive position and future prospects may be adversely affected.

RISKS RELATED TO OUR FINANCIAL STATEMENTS

Changes in accounting policies or accounting standards, and changes in how accounting standards are interpreted or applied, could materially affect how we report our financial results and condition. Our accounting policies are fundamental to determining and understanding our financial results and condition. As described below, some of these policies require use of estimates and assumptions that may affect the value of our assets or liabilities and financial results. Any changes in our

accounting policies could materially affect our financial statements.

From time to time the FASB and the SEC change the financial accounting and reporting standards that govern the preparation of our external financial statements. For example, on January 1, 2020, we adopted Accounting Standards Update 2016-13 – *Financial Instruments-Credit Losses* (Topic 326), which replaced the previous “incurred loss” model for the allowance for credit losses with an “expected loss” model referred to as the Current Expected Credit Loss model, or CECL.

In addition, accounting standard setters and those who interpret the accounting standards (such as the FASB, SEC, banking regulators and our outside auditors) may change or even reverse their previous interpretations or positions on how these standards should be applied. Changes in financial accounting and reporting standards and changes in current interpretations may be beyond our control, can be hard to predict and could materially affect how we report our financial results and condition. We may be required to apply a new or revised standard retroactively or apply an existing standard differently, also retroactively, in each case potentially resulting in our restating prior period financial statements in material amounts.

For more information, including information on our adoption of CECL, refer to the “Current Accounting Developments” section in this Report.

Our financial statements are based in part on assumptions and estimates which, if wrong, could cause unexpected losses in the future, and our financial statements depend on our internal controls over financial reporting.

Pursuant to U.S. GAAP, we are required to use certain assumptions and estimates in preparing our financial statements, including in determining credit loss reserves, reserves for mortgage repurchases, reserves related to litigation and the fair value of certain assets and liabilities, among other items. Several of our accounting policies are critical because they require management to make difficult, subjective and complex judgments about matters that are inherently uncertain and because it is likely that materially different amounts would be reported under different conditions or using different assumptions. For a description of these policies, refer to the “Critical Accounting Policies” section in this Report. If assumptions or estimates underlying our financial statements are incorrect, we may experience material losses.

Certain of our financial instruments, including derivative assets and liabilities, debt securities, certain loans, MSRs, private equity investments, structured notes and certain repurchase and resale agreements, among other items, require a determination of their fair value in order to prepare our financial statements. Where quoted market prices are not available, we may make fair value determinations based on internally developed models or other means which ultimately rely to some degree on management judgment, and there is no assurance that our models will capture or appropriately reflect all relevant inputs required to accurately determine fair value. Some of these and other assets and liabilities may have no direct observable price levels, making their valuation particularly subjective, being based on significant estimation and judgment. In addition, sudden illiquidity in markets or declines in prices of certain loans and securities may make it more difficult to value certain balance sheet items, which may lead to the possibility that such valuations will be subject to further change or adjustment and could lead to declines in our earnings.

The Sarbanes-Oxley Act of 2002 (Sarbanes-Oxley) requires our management to evaluate the Company’s disclosure controls and procedures and its internal control over financial reporting

and requires our auditors to issue a report on our internal control over financial reporting. We are required to disclose, in our annual report on Form 10-K, the existence of any “material weaknesses” in our internal controls. We cannot assure that we will not identify one or more material weaknesses as of the end of any given quarter or year, nor can we predict the effect on our stock price of disclosure of a material weakness. In addition, our customers may rely on the effectiveness of our internal controls as a service provider, and any deficiency in those controls could affect our customers and damage our reputation or business. Sarbanes-Oxley also limits the types of non-audit services our outside auditors may provide to us in order to preserve their independence from us. If our auditors were found not to be “independent” of us under SEC rules, we could be required to engage new auditors and re-file financial statements and audit reports with the SEC. We could be out of compliance with SEC rules until new financial statements and audit reports were filed, limiting our ability to raise capital and resulting in other adverse consequences.

RISKS RELATED TO STRATEGIC DECISIONS

If we are unable to develop and execute effective business plans or strategies or manage change effectively, our competitive standing and results of operations could suffer.

We are subject to rapid changes in technology, regulation, and product innovation, face intense competition for customers, sources of revenue, capital, services, qualified team members, and other essential business resources, and are subject to heightened regulatory expectations particularly with respect to compliance and risk management. In order to meet these challenges, we may undertake business plans or strategies related to, among other things, our organizational structure, our compliance and risk management framework, our expenses and efficiency, the types of products and services we offer, the types of businesses we engage in, the geographies in which we operate, the manner in which we serve our clients and customers, the third parties with which we do business, and the methods and distribution channels by which we offer our products and services. Accomplishing these business plans or strategies may be complex, time intensive, require significant financial, technological, management and other resources, and may divert management attention and resources away from other areas of the Company, and there is no guarantee that any business plans or strategies will ultimately be successful. To the extent we are unable to develop or execute effective business plans or strategies or manage change effectively, our competitive position, reputation, prospects for growth, and results of operations may be adversely affected.

In addition, we regularly explore opportunities to expand our products, services, and assets through strategic acquisitions of companies or businesses in the financial services industry. We generally must receive federal regulatory approvals before we can acquire a bank, bank holding company, or certain other financial services businesses. We cannot be certain when or if, or on what terms and conditions, any required regulatory approvals will be granted. We might be required to sell banks, branches and/or business units or assets or issue additional equity as a condition to receiving regulatory approval for an acquisition. When we do announce an acquisition, our stock price may fall depending on the size of the acquisition, the type of business to be acquired, the purchase price, and the potential dilution to existing stockholders or our earnings per share if we issue common stock in connection with the acquisition. Furthermore, difficulty in integrating an acquired company or business may

Risk Factors (continued)

cause us not to realize expected revenue increases, cost savings, increases in geographic or product presence, and other projected benefits from the acquisition. The integration could result in higher than expected deposit attrition, loss of key team members, an increase in our compliance costs or risk profile, disruption of our business or the acquired business, or otherwise harm our ability to retain customers and team members or achieve the anticipated benefits of the acquisition. Time and resources spent on integration may also impair our ability to grow our existing businesses. Many of the foregoing risks may be increased if the acquired company or business operates internationally or in a geographic location where we do not already have significant business operations and/or team members. Similarly, from time to time, we may decide to divest certain businesses or assets. Difficulties in executing a divestiture may cause us not to realize any expected cost savings or other benefits from the divestiture, or may result in higher than expected losses of team members or harm our ability to retain customers.

* * *

Any factor described in this Report or in any of our other SEC filings could by itself, or together with other factors, adversely affect our financial results and condition. Refer to our quarterly reports on Form 10-Q filed with the SEC in 2020 for material changes to the above discussion of risk factors. There are factors not discussed above or elsewhere in this Report that could adversely affect our financial results and condition.

Controls and Procedures

Disclosure Controls and Procedures

The Company's management evaluated the effectiveness, as of December 31, 2019, of the Company's disclosure controls and procedures. The Company's chief executive officer and chief financial officer participated in the evaluation. Based on this evaluation, the Company's chief executive officer and chief financial officer concluded that the Company's disclosure controls and procedures were effective as of December 31, 2019.

Internal Control Over Financial Reporting

Internal control over financial reporting is defined in Rule 13a-15(f) promulgated under the Securities Exchange Act of 1934 as a process designed by, or under the supervision of, the Company's principal executive and principal financial officers and effected by the Company's Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles (GAAP) and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of assets of the Company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- 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. 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. No change occurred during any quarter in 2019 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. Management's report on internal control over financial reporting is set forth below and should be read with these limitations in mind.

Management's Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019, using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework (2013)*. Based on this assessment, management concluded that as of December 31, 2019, the Company's internal control over financial reporting was effective.

KPMG LLP, the independent registered public accounting firm that audited the Company's financial statements included in this Annual Report, issued an audit report on the Company's internal control over financial reporting. KPMG's audit report appears on the following page.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Wells Fargo & Company:

Opinion on Internal Control Over Financial Reporting

We have audited Wells Fargo & Company and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and our report dated February 26, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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 Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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.

KPMG LLP

San Francisco, California
February 26, 2020

Financial Statements

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Income

(in millions, except per share amounts)	Year ended December 31,		
	2019	2018	2017
Interest income			
Debt securities	\$ 14,955	14,406	12,946
Mortgage loans held for sale	813	777	786
Loans held for sale	79	140	50
Loans	44,146	43,974	41,388
Equity securities	962	992	799
Other interest income	5,128	4,358	2,940
Total interest income	66,083	64,647	58,909
Interest expense			
Deposits	8,635	5,622	3,013
Short-term borrowings	2,316	1,717	758
Long-term debt	7,350	6,703	5,157
Other interest expense	551	610	424
Total interest expense	18,852	14,652	9,352
Net interest income	47,231	49,995	49,557
Provision for credit losses	2,687	1,744	2,528
Net interest income after provision for credit losses	44,544	48,251	47,029
Noninterest income			
Service charges on deposit accounts	4,798	4,716	5,111
Trust and investment fees	14,072	14,509	14,495
Card fees	4,016	3,907	3,960
Other fees	3,084	3,384	3,557
Mortgage banking	2,715	3,017	4,350
Insurance	378	429	1,049
Net gains from trading activities	993	602	542
Net gains on debt securities (1)	140	108	479
Net gains from equity securities (2)	2,843	1,515	1,779
Lease income	1,612	1,753	1,907
Other	3,181	2,473	1,603
Total noninterest income	37,832	36,413	38,832
Noninterest expense			
Salaries	18,382	17,834	17,363
Commission and incentive compensation	10,828	10,264	10,442
Employee benefits	5,874	4,926	5,566
Technology and equipment	2,763	2,444	2,237
Net occupancy	2,945	2,888	2,849
Core deposit and other intangibles	108	1,058	1,152
FDIC and other deposit assessments	526	1,110	1,287
Other	16,752	15,602	17,588
Total noninterest expense	58,178	56,126	58,484
Income before income tax expense	24,198	28,538	27,377
Income tax expense	4,157	5,662	4,917
Net income before noncontrolling interests	20,041	22,876	22,460
Less: Net income from noncontrolling interests	492	483	277
Wells Fargo net income	\$ 19,549	22,393	22,183
Less: Preferred stock dividends and other	1,611	1,704	1,629
Wells Fargo net income applicable to common stock	\$ 17,938	20,689	20,554
Per share information			
Earnings per common share	\$ 4.08	4.31	4.14
Diluted earnings per common share	4.05	4.28	4.10
Average common shares outstanding	4,393.1	4,799.7	4,964.6
Diluted average common shares outstanding	4,425.4	4,838.4	5,017.3

(1) Total other-than-temporary impairment (OTTI) losses were \$64 million, \$17 million and \$205 million for the years ended December 31, 2019, 2018 and 2017, respectively. Of total OTTI, losses of \$63 million, \$28 million and \$262 million were recognized in earnings, and losses (reversal of losses) of \$1 million, \$(11) million and \$(57) million were recognized as non-credit-related OTTI in other comprehensive income for the years ended December 31, 2019, 2018 and 2017, respectively.

(2) Includes OTTI losses of \$245 million, \$352 million and \$344 million for the years ended December 31, 2019, 2018 and 2017, respectively.

The accompanying notes are an integral part of these statements.

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Comprehensive Income

(in millions)	Year ended December 31,		
	2019	2018	2017
Wells Fargo net income	\$ 19,549	22,393	22,183
Other comprehensive income (loss), before tax:			
Debt securities (1):			
Net unrealized gains (losses) arising during the period	5,439	(4,493)	2,719
Reclassification of net (gains) losses to net income	122	248	(737)
Derivatives and hedging activities:			
Net unrealized losses arising during the period	(24)	(532)	(540)
Reclassification of net (gains) losses on cash flow hedges to net income	299	294	(543)
Defined benefit plans adjustments:			
Net actuarial and prior service gains (losses) arising during the period	(40)	(434)	49
Amortization of net actuarial loss, settlements and other to net income	133	253	153
Foreign currency translation adjustments:			
Net unrealized gains (losses) arising during the period	73	(156)	96
Other comprehensive income (loss), before tax	6,002	(4,820)	1,197
Income tax benefit (expense) related to other comprehensive income	(1,458)	1,144	(434)
Other comprehensive income (loss), net of tax	4,544	(3,676)	763
Less: Other comprehensive loss from noncontrolling interests	—	(2)	(62)
Wells Fargo other comprehensive income (loss), net of tax	4,544	(3,674)	825
Wells Fargo comprehensive income	24,093	18,719	23,008
Comprehensive income from noncontrolling interests	492	481	215
Total comprehensive income	\$ 24,585	19,200	23,223

(1) The year ended December 31, 2017, includes net unrealized gains (losses) arising during the period from equity securities of \$81 million and reclassification of net (gains) losses to net income related to equity securities of \$(456) million. In connection with our adoption in first quarter 2018 of Accounting Standards Update (ASU) 2016-01, the years ended December 31, 2018, and December 31, 2019, reflect net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.

The accompanying notes are an integral part of these statements.

Wells Fargo & Company and Subsidiaries

Consolidated Balance Sheet

(in millions, except shares)	Dec 31, 2019	Dec 31, 2018
Assets		
Cash and due from banks	\$ 21,757	23,551
Interest-earning deposits with banks	119,493	149,736
Total cash, cash equivalents, and restricted cash	141,250	173,287
Federal funds sold and securities purchased under resale agreements	102,140	80,207
Debt securities:		
Trading, at fair value	79,733	69,989
Available-for-sale, at fair value	263,459	269,912
Held-to-maturity, at cost (fair value \$156,860 and \$142,115)	153,933	144,788
Mortgage loans held for sale (includes \$16,606 and \$11,771 carried at fair value) (1)	23,342	15,126
Loans held for sale (includes \$972 and \$1,469 carried at fair value) (1)	977	2,041
Loans (includes \$171 and \$244 carried at fair value) (1)	962,265	953,110
Allowance for loan losses	(9,551)	(9,775)
Net loans	952,714	943,335
Mortgage servicing rights:		
Measured at fair value	11,517	14,649
Amortized	1,430	1,443
Premises and equipment, net	9,309	8,920
Goodwill	26,390	26,418
Derivative assets	14,203	10,770
Equity securities (includes \$41,936 and \$29,556 carried at fair value) (1)	68,241	55,148
Other assets	78,917	79,850
Total assets (2)	\$ 1,927,555	1,895,883
Liabilities		
Noninterest-bearing deposits	\$ 344,496	349,534
Interest-bearing deposits	978,130	936,636
Total deposits	1,322,626	1,286,170
Short-term borrowings	104,512	105,787
Derivative liabilities	9,079	8,499
Accrued expenses and other liabilities	75,163	69,317
Long-term debt	228,191	229,044
Total liabilities (3)	1,739,571	1,698,817
Equity		
Wells Fargo stockholders' equity:		
Preferred stock	21,549	23,214
Common stock – \$1-2/3 par value, authorized 9,000,000,000 shares; issued 5,481,811,474 shares	9,136	9,136
Additional paid-in capital	61,049	60,685
Retained earnings	166,697	158,163
Cumulative other comprehensive income (loss)	(1,311)	(6,336)
Treasury stock – 1,347,385,537 shares and 900,557,866 shares	(68,831)	(47,194)
Unearned ESOP shares	(1,143)	(1,502)
Total Wells Fargo stockholders' equity	187,146	196,166
Noncontrolling interests	838	900
Total equity	187,984	197,066
Total liabilities and equity	\$ 1,927,555	1,895,883

(1) Parenthetical amounts represent assets and liabilities that we are required to carry at fair value or have elected the fair value option.

(2) Our consolidated assets at December 31, 2019 and 2018, include the following assets of certain variable interest entities (VIEs) that can only be used to settle the liabilities of those VIEs: Cash and due from banks, \$16 million and \$139 million; Interest-bearing deposits with banks, \$284 million and \$8 million; Debt securities, \$540 million and \$562 million; Net loans, \$13.2 billion and \$13.6 billion; Derivative assets, \$1 million and \$0 million; Equity securities, \$118 million and \$85 million; Other assets, \$239 million and \$227 million; and Total assets, \$14.4 billion and \$14.6 billion, respectively. Prior period balances have been conformed to current period presentation.

(3) Our consolidated liabilities at December 31, 2019 and 2018, include the following VIE liabilities for which the VIE creditors do not have recourse to Wells Fargo: Short-term borrowings, \$401 million and \$493 million; Derivative liabilities, \$3 million and \$0 million; Accrued expenses and other liabilities, \$235 million and \$199 million; Long-term debt, \$587 million and \$816 million; and Total liabilities, \$1.2 billion and \$1.5 billion, respectively. Prior period balances have been conformed to current period presentation.

The accompanying notes are an integral part of these statements.

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Changes in Equity

(in millions, except shares)	Preferred stock		Common stock	
	Shares	Amount	Shares	Amount
Balance December 31, 2016	11,532,712	\$ 24,551	5,016,109,326	\$ 9,136
Cumulative effect from change in hedge accounting (1)				
Balance January 1, 2017	11,532,712	24,551	5,016,109,326	9,136
Net income				
Other comprehensive income (loss), net of tax				
Noncontrolling interests				
Common stock issued			57,257,564	
Common stock repurchased			(196,519,707)	
Preferred stock issued to ESOP	950,000	950		
Preferred stock released by ESOP				
Preferred stock converted to common shares	(833,077)	(833)	14,769,445	
Common stock warrants repurchased/exercised				
Preferred stock issued	27,600	690		
Common stock dividends				
Preferred stock dividends				
Stock incentive compensation expense				
Net change in deferred compensation and related plans				
Net change	144,523	807	(124,492,698)	—
Balance December 31, 2017	11,677,235	\$ 25,358	4,891,616,628	\$ 9,136
Cumulative effect from change in accounting policies (2)				
Balance January 1, 2018	11,677,235	\$ 25,358	4,891,616,628	\$ 9,136
Adoption of accounting standard related to certain tax effects stranded in accumulated other comprehensive income (loss)(3)				
Net income				
Other comprehensive income (loss), net of tax				
Noncontrolling interests				
Common stock issued			41,082,047	
Common stock repurchased			(375,477,998)	
Preferred stock redeemed (4)	(2,150,375)	(1,995)		
Preferred stock issued to ESOP	1,100,000	1,100		
Preferred stock released by ESOP				
Preferred stock converted to common shares	(1,249,644)	(1,249)	24,032,931	
Common stock warrants repurchased/exercised				
Preferred stock issued	—	—		
Common stock dividends				
Preferred stock dividends				
Stock incentive compensation expense				
Net change in deferred compensation and related plans				
Net change	(2,300,019)	(2,144)	(310,363,020)	—
Balance December 31, 2018	9,377,216	\$ 23,214	4,581,253,608	\$ 9,136

- (1) Effective January 1, 2017, we adopted changes in hedge accounting pursuant to ASU 2017-12 – Derivatives and Hedging (Topic 815): *Targeted Improvements to Accounting for Hedging Activities*.
- (2) Effective January 1, 2018, we adopted ASU 2016-04 – Liabilities – Extinguishments of Liabilities (Subtopic 405-20): *Recognition of Breakage for Certain Prepaid Stored-Value Products*, ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, and ASU 2014-09 – Revenue from Contracts With Customers (Topic 606) and subsequent related Updates.
- (3) Represents the reclassification from other comprehensive income to retained earnings as a result of our adoption of ASU 2018-02 – *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, in third quarter 2018.
- (4) Represents the impact of the redemption of preferred stock, series J, in third quarter 2018.

The accompanying notes are an integral part of these statements.

(continued on following pages)

Wells Fargo stockholders' equity							
Additional paid-in capital	Retained earnings	Cumulative other comprehensive income (loss)	Treasury stock	Unearned ESOP shares	Total Wells Fargo stockholders' equity	Noncontrolling interests	Total equity
60,234	133,075	(3,137)	(22,713)	(1,565)	199,581	916	200,497
	(381)	168			(213)		(213)
60,234	132,694	(2,969)	(22,713)	(1,565)	199,368	916	200,284
	22,183				22,183	277	22,460
		825			825	(62)	763
—					—	12	12
(133)	(277)		2,758		2,348		2,348
750			(10,658)		(9,908)		(9,908)
31				(981)	—		—
(35)				868	833		833
97			736		—		—
(133)					(133)		(133)
(13)					677		677
50	(7,708)				(7,658)		(7,658)
	(1,629)				(1,629)		(1,629)
875					875		875
(830)			(15)		(845)		(845)
659	12,569	825	(7,179)	(113)	7,568	227	7,795
60,893	145,263	(2,144)	(29,892)	(1,678)	206,936	1,143	208,079
	94	(118)			(24)		(24)
60,893	145,357	(2,262)	(29,892)	(1,678)	206,912	1,143	208,055
	400	(400)			—		—
	22,393				22,393	483	22,876
		(3,674)			(3,674)	(2)	(3,676)
7					7	(724)	(717)
(76)	(321)		2,073		1,676		1,676
—			(20,633)		(20,633)		(20,633)
	(155)				(2,150)		(2,150)
43				(1,143)	—		—
(70)				1,319	1,249		1,249
6			1,243		—		—
(325)					(325)		(325)
—					—		—
66	(7,955)				(7,889)		(7,889)
	(1,556)				(1,556)		(1,556)
1,041					1,041		1,041
(900)			15		(885)		(885)
(208)	12,806	(4,074)	(17,302)	176	(10,746)	(243)	(10,989)
60,685	158,163	(6,336)	(47,194)	(1,502)	196,166	900	197,066

(continued from previous pages)

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Changes in Equity

(in millions, except shares)	Preferred stock		Common stock	
	Shares	Amount	Shares	Amount
Balance December 31, 2018	9,377,216	\$ 23,214	4,581,253,608	\$ 9,136
Cumulative effect from change in accounting policies (1)				
Balance January 1, 2019	9,377,216	23,214	4,581,253,608	9,136
Net income				
Other comprehensive income (loss), net of tax				
Noncontrolling interests				
Common stock issued			48,771,064	
Common stock repurchased			(502,418,179)	
Preferred stock redeemed (2)	(1,550,000)	(1,330)		
Preferred stock issued to ESOP	—	—		
Preferred stock released by ESOP				
Preferred stock converted to common shares	(335,047)	(335)	6,819,444	
Common stock warrants repurchased/exercised				
Preferred stock issued	—	—		
Common stock dividends				
Preferred stock dividends				
Stock incentive compensation expense				
Net change in deferred compensation and related plans				
Net change	(1,885,047)	(1,665)	(446,827,671)	—
Balance December 31, 2019	7,492,169	\$ 21,549	4,134,425,937	\$ 9,136

(1) Effective January 1, 2019, we adopted ASU 2016-02 – Leases (Topic 842) and subsequent related Updates, ASU 2017-08 – Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities. See Note 1 (Summary of Significant Accounting Policies) in this Report for more information.

(2) Represents the impact of the partial redemption of preferred stock, series K, in third quarter 2019.

The accompanying notes are an integral part of these statements.

Wells Fargo stockholders' equity							
Additional paid-in capital	Retained earnings	Cumulative other comprehensive income (loss)	Treasury stock	Unearned ESOP shares	Total Wells Fargo stockholders' equity	Noncontrolling interests	Total equity
60,685	158,163	(6,336)	(47,194)	(1,502)	196,166	900	197,066
	(492)	481			(11)		(11)
60,685	157,671	(5,855)	(47,194)	(1,502)	196,155	900	197,055
	19,549				19,549	492	20,041
		4,544			4,544	—	4,544
—					—	(554)	(554)
9	(382)		2,530		2,157		2,157
—			(24,533)		(24,533)		(24,533)
	(220)				(1,550)		(1,550)
—				—	—		—
(24)				359	335		335
(16)			351		—		—
—					—		—
—					—		—
86	(8,530)				(8,444)		(8,444)
	(1,391)				(1,391)		(1,391)
1,234					1,234		1,234
(925)			15		(910)		(910)
364	9,026	4,544	(21,637)	359	(9,009)	(62)	(9,071)
61,049	166,697	(1,311)	(68,831)	(1,143)	187,146	838	187,984

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Cash Flows

(in millions)	Year ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income before noncontrolling interests	\$ 20,041	22,876	22,460
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	2,687	1,744	2,528
Changes in fair value of MSRs, MLHFS and LHFS carried at fair value	3,702	453	886
Depreciation, amortization and accretion	7,075	5,593	5,406
Other net gains	(5,500)	(7,630)	(1,518)
Stock-based compensation	2,274	2,255	2,046
Originations and purchases of mortgage loans held for sale	(158,673)	(152,832)	(181,269)
Proceeds from sales of and paydowns on mortgage loans held for sale	112,718	119,097	134,984
Net change in:			
Debt and equity securities, held for trading	22,066	35,054	33,505
Loans held for sale	788	(960)	327
Deferred income taxes	(3,246)	1,970	666
Derivative assets and liabilities	(2,665)	1,513	(5,025)
Other assets	3,034	7,805	(1,214)
Other accrued expenses and liabilities	2,429	(865)	4,837
Net cash provided by operating activities	6,730	36,073	18,619
Cash flows from investing activities:			
Net change in:			
Federal funds sold and securities purchased under resale agreements	(21,933)	(1,184)	(21,497)
Available-for-sale debt securities:			
Proceeds from sales	9,386	7,320	42,067
Prepayments and maturities	46,542	36,725	45,688
Purchases	(57,015)	(60,067)	(103,656)
Held-to-maturity securities:			
Paydowns and maturities	13,684	10,934	10,673
Purchases	(8,649)	—	—
Equity securities, not held for trading:			
Proceeds from sales and capital returns	6,143	6,242	5,451
Purchases	(6,865)	(6,433)	(3,735)
Loans:			
Loans originated by banking subsidiaries, net of principal collected	(23,698)	(18,619)	317
Proceeds from sales (including participations) of loans held for investment	12,038	16,294	10,439
Purchases (including participations) of loans	(2,033)	(2,088)	(3,702)
Principal collected on nonbank entities' loans	3,912	6,791	7,448
Loans originated by nonbank entities	(5,274)	(6,482)	(6,814)
Proceeds from sales of foreclosed assets and short sales	2,666	3,592	5,198
Other, net (1)	1,465	(779)	(1,029)
Net cash used by investing activities	(29,631)	(7,754)	(13,152)
Cash flows from financing activities:			
Net change in:			
Deposits	36,137	(48,034)	29,912
Short-term borrowings	(1,275)	2,531	14,020
Long-term debt:			
Proceeds from issuance	53,381	47,595	43,575
Repayment	(60,996)	(40,565)	(80,802)
Preferred stock:			
Proceeds from issuance	—	—	677
Redeemed	(1,550)	(2,150)	—
Cash dividends paid	(1,391)	(1,622)	(1,629)
Common stock:			
Proceeds from issuance	380	632	1,211
Stock tendered for payment of withholding taxes	(302)	(331)	(393)
Repurchased	(24,533)	(20,633)	(9,908)
Cash dividends paid	(8,198)	(7,692)	(7,480)
Net change in noncontrolling interests	(513)	(462)	30
Other, net	(276)	(248)	(133)
Net cash used by financing activities	(9,136)	(70,979)	(10,920)
Net change in cash, cash equivalents, and restricted cash	(32,037)	(42,660)	(5,453)
Cash, cash equivalents, and restricted cash at beginning of year	173,287	215,947	221,400
Cash, cash equivalents, and restricted cash at end of year	\$ 141,250	173,287	215,947
Supplemental cash flow disclosures:			
Cash paid for interest	\$ 18,834	14,366	9,103
Cash paid for income taxes	7,557	1,977	6,592

(1) Prior periods have been revised to conform to the current period presentation.

The accompanying notes are an integral part of these statements. See Note 1 (Summary of Significant Accounting Policies) for noncash activities.

Notes to Financial Statements

See the Glossary of Acronyms at the end of this Report for terms used throughout the Financial Statements and related Notes.

Note 1: Summary of Significant Accounting Policies

Wells Fargo & Company is a diversified financial services company. We provide banking, investment and mortgage products and services, as well as consumer and commercial finance, through banking locations and offices, the internet and other distribution channels to individuals, businesses and institutions in all 50 states, the District of Columbia, and in countries outside the U.S. When we refer to “Wells Fargo,” “the Company,” “we,” “our” or “us,” we mean Wells Fargo & Company and Subsidiaries (consolidated). Wells Fargo & Company (the Parent) is a financial holding company and a bank holding company.

Our accounting and reporting policies conform with U.S. generally accepted accounting principles (GAAP) and practices in the financial services industry. To prepare the financial statements in conformity with GAAP, management must make estimates based on assumptions about future economic and market conditions (for example, unemployment, market liquidity, real estate prices, etc.) that affect the reported amounts of assets and liabilities at the date of the financial statements, income and expenses during the reporting period and the related disclosures. Although our estimates contemplate current conditions and how we expect them to change in the future, it is reasonably possible that actual conditions could be worse than anticipated in those estimates, which could materially affect our results of operations and financial condition. Management has made significant estimates in several areas, including:

- allowance for credit losses (Note 6 (Loans and Allowance for Credit Losses));
- valuations of residential mortgage servicing rights (MSRs) (Note 10 (Securitizations and Variable Interest Entities) and Note 11 (Mortgage Banking Activities));
- valuations of financial instruments (Note 18 (Derivatives) and Note 19 (Fair Values of Assets and Liabilities));
- liabilities for contingent litigation losses (Note 17 (Legal Actions)); and
- income taxes (Note 24 (Income Taxes)).

Actual results could differ from those estimates.

Accounting Standards Adopted in 2019

In 2019, we adopted the following new accounting guidance:

- Accounting Standards Update (ASU or Update) 2018-16 – Derivatives and Hedging (Topic 815): *Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes*
- ASU 2017-08 – Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20): *Premium Amortization on Purchased Callable Debt Securities*
- ASU 2016-02 – Leases (Topic 842) and subsequent related Updates, including early adoption of ASU 2019-01 – Leases (Topic 842): *Codification Improvements*

ASU 2018-16 expands the list of U.S. benchmark interest rates permitted in the application of hedge accounting. The Update adds the OIS rate based on SOFR as a U.S. benchmark interest rate to facilitate the London Interbank Offered Rate (LIBOR) to SOFR transition and provide sufficient lead time for entities to prepare for changes to interest rate risk hedging strategies for both risk management and hedge accounting purposes. The Update is applied prospectively for qualifying new or re-designated hedging relationships entered into on or after adoption date.

We adopted the guidance in first quarter 2019. The Update has not had an impact as we have not designated SOFR OIS as a benchmark interest rate in any hedging relationships.

ASU 2017-08 changes the interest income recognition model for purchased callable debt securities carried at a premium, as the premium will be amortized to the earliest call date rather than to the contractual maturity date. Accounting for purchased callable debt securities held at a discount does not change, as the discount will continue to accrete to the contractual maturity date. The Update impacted our investments in purchased callable debt securities classified as available-for-sale (AFS) and held-to-maturity (HTM), which predominantly consist of debt securities of U.S. states and political subdivisions.

We adopted the Update in first quarter 2019 and recorded a cumulative-effect adjustment as of January 1, 2019, that decreased total stockholders' equity by \$111 million. Retained earnings was reduced by \$592 million which reflects both the incremental premium amortization under the new guidance from the acquisition date of our impacted AFS and HTM debt securities through the date of adoption and the fact that the incremental premium amortization is not deductible for federal income tax purposes. Other comprehensive income (OCI) was increased by \$481 million which reflects the corresponding adjustment to the adoption date unrealized gain or loss of impacted AFS debt securities. Going forward, interest income recognized prior to the call date will be reduced because the premium will be amortized over a shorter period.

ASU 2016-02 modifies the guidance used by lessors and lessees to account for leasing transactions. For our transition to the new guidance, we elected several available practical expedients, including to not reassess the classification of our existing leases, any initial direct costs associated with our leases, or whether any existing contracts are or contain leases. In addition, we elected not to provide a comparative presentation for 2018 and 2017 financial statements.

We adopted the Update in first quarter 2019 and recorded a cumulative-effect adjustment that increased retained earnings by \$100 million related to deferred gains on our prior sale-leaseback transactions. We also recognized operating lease right-of-use (ROU) assets and liabilities, substantially all of which relate to our leasing of real estate as a lessee, of \$4.9 billion and \$5.6 billion, respectively.

Note 1: Summary of Significant Accounting Policies (continued)

Table 1.1 summarizes financial assets and liabilities by form and measurement accounting model.

Table 1.1: Accounting Model for Financial Assets and Financial Liabilities

Balance sheet caption	Measurement model(s)	Financial statement Note reference
Cash and due from banks	Amortized cost	Note 3: Cash, Loan and Dividend Restrictions
Interest-earning deposits with banks	Amortized cost	Note 3: Cash, Loan and Dividend Restrictions
Federal funds sold and securities purchased under resale agreements	Amortized cost	N/A
Debt securities:		
Trading	FV-NI (1)	Note 4: Trading Activities Note 19: Fair Values of Assets and Liabilities
Available-for-sale	FV-OCI (2)	Note 5: Available-for-Sale and Held-to-Maturity Debt Securities Note 19: Fair Values of Assets and Liabilities
Held-to-maturity	Amortized cost	Note 5: Available-for-Sale and Held-to-Maturity Debt Securities
Mortgage loans held for sale	FV-NI (1) LOCOM (3)	Note 19: Fair Values of Assets and Liabilities
Loans held for sale	FV-NI (1) LOCOM (3)	Note 19: Fair Values of Assets and Liabilities
Loans	Amortized cost FV-NI (1)	Note 6: Loans and Allowance for Credit Losses Note 19: Fair Values of Assets and Liabilities
Derivative assets and liabilities	FV-NI (1) FV-OCI (2)	Note 4: Trading Activities Note 18: Derivatives Note 19: Fair Values of Assets and Liabilities
Equity securities:		
Marketable	FV-NI (1)	Note 4: Trading Activities Note 8: Equity Securities Note 19: Fair Values of Assets and Liabilities
Nonmarketable	FV-NI (1) Cost method Equity method MA (4)	Note 4: Trading Activities Note 8: Equity Securities Note 19: Fair Values of Assets and Liabilities
Other assets	Amortized cost (5)	Note 9: Premises, Equipment, and Other Assets
Deposits	Amortized cost	Note 13: Deposits
Short-term borrowings	Amortized cost	Note 14: Short-Term Borrowings
Accrued expenses and other liabilities	Amortized cost (6)	Note 4: Trading Activities Note 7: Leasing Activity Note 19: Fair Values of Assets and Liabilities
Long-term debt	Amortized cost	Note 15: Long-Term Debt

(1) FV-NI represents the fair value through net income accounting model.

(2) FV-OCI represents the fair value through other comprehensive income accounting model.

(3) LOCOM represents the lower of cost or fair value accounting model.

(4) MA represents the measurement alternative accounting model.

(5) Other assets are generally measured at amortized cost, except for bank-owned life insurance which is measured at cash surrender value.

(6) Accrued expenses and other liabilities are generally measured at amortized cost, except for trading short-sale liabilities which are measured at FV-NI.

Consolidation

Our consolidated financial statements include the accounts of the Parent and our subsidiaries in which we have a controlling financial interest. When our consolidated subsidiaries follow specialized industry accounting, that accounting is retained in consolidation.

We are also a variable interest holder in certain entities in which equity investors do not have the characteristics of a controlling financial interest or where the entity does not have enough equity at risk to finance its activities without additional subordinated financial support from other parties (collectively referred to as variable interest entities (VIEs)). Our variable interest arises from contractual, ownership or other monetary interests in the entity, which change with fluctuations in the fair value of the entity's net assets. We consolidate a VIE if we are the primary beneficiary, which is when we have both the power to direct the activities that most significantly impact the VIE and a variable interest that could potentially be significant to the VIE. To determine whether or not a variable interest we hold could potentially be significant to the VIE, we consider both qualitative and quantitative factors regarding the nature, size and form of

our involvement with the VIE. We assess whether or not we are the primary beneficiary of a VIE on an ongoing basis.

Significant intercompany accounts and transactions are eliminated in consolidation. When we have significant influence over operating and financing decisions for a company but do not own a majority of the voting equity interests, we account for the investment using the equity method of accounting, which requires us to recognize our proportionate share of the company's earnings. If we do not have significant influence, we account for the equity security under the fair value method, cost method or measurement alternative.

Cash, Cash Equivalents and Restricted Cash

Cash, cash equivalents and restricted cash include cash on hand, cash items in transit, and amounts due from or held with other depository institutions. See Note 3 (Cash, Loan and Dividend Restrictions) for the nature of our restrictions on cash and cash equivalents.

Trading Activities

We engage in trading activities to accommodate the investment and risk management activities of our customers. These activities predominantly occur in our Wholesale Banking businesses and, to a lesser extent, other divisions of the Company. Trading assets and liabilities include debt securities, equity securities, loans, derivatives and short sales, which are reported within the balance sheet based on the accounting classification of the instrument. In addition, debt securities that are held for investment purposes that we have elected to account for under the fair value method, are classified as trading.

Our trading assets and liabilities are carried on the balance sheet at fair value with changes in fair value recognized in net gains from trading activities and interest income and interest expense recognized in net interest income.

Customer accommodation trading activities include our actions as an intermediary to buy and sell financial instruments and market-making activities. We also take positions to manage our exposure to customer accommodation activities. We hold financial instruments for trading in long positions, as well as short positions, to facilitate our trading activities. As an intermediary, we interact with market buyers and sellers to facilitate the purchase and sale of financial instruments to meet the anticipated or current needs of our customers. For example, we may purchase or sell a derivative to a customer who wants to manage interest rate risk exposure. We typically enter into an offsetting derivative or security position to manage our exposure to the customer transaction. We earn income based on the transaction price difference between the customer transaction and the offsetting position, which is reflected in earnings where the fair value changes and related interest income and expense of the positions are recorded.

Our market-making activities include taking long and short trading positions to facilitate customer order flow. These activities are typically executed on a short-term basis. As a market-maker we earn income due to: (1) the difference between the price paid or received for the purchase and sale of the security (bid-ask spread), (2) the net interest income of the positions, and (3) the changes in fair value of the trading positions held on our balance sheet. Additionally, we may enter into separate derivative or security positions to manage our exposure related to our long and short trading positions taken in our market-making activities. Income earned on these market-making activities are reflected in earnings where the fair value changes and related interest income and expense of the positions are recorded.

Debt Securities

Our investments in debt securities that are not held for trading purposes are classified as either debt securities available-for-sale (AFS) or held-to-maturity (HTM).

AVAILABLE-FOR-SALE DEBT SECURITIES

Investments in debt securities for which the Company does not have the positive intent and ability to hold to maturity are classified as AFS. AFS debt securities are measured at fair value with unrealized gains and losses reported in cumulative OCI, net of applicable income taxes.

We conduct other-than-temporary impairment (OTTI) analysis on a quarterly basis or more often if a potential loss-triggering event occurs. The initial indicator of OTTI is a decline in fair value below the amortized cost of the debt security. We recognize OTTI in earnings as a reduction to the amortized cost of the security. OTTI related to AFS debt securities is classified as

net gains (losses) from debt securities within noninterest income.

We recognize OTTI for an AFS debt security that has a decline in fair value below amortized cost if we: (1) have the intent to sell the security, (2) it is more likely than not that we will be required to sell the security before recovery of its amortized cost basis, or (3) we do not expect to recover the entire amortized cost basis of the security.

Estimating recovery of the amortized cost basis of an AFS debt security is based upon an assessment of the cash flows expected to be collected. If the present value of cash flows expected to be collected discounted at the security's effective yield is less than amortized cost, an OTTI has occurred. In performing an assessment of the cash flows expected to be collected, we consider all relevant information, including:

- the length of time and the extent to which the fair value has been less than the amortized cost basis;
- the historical and implied volatility of the fair value of the security;
- the cause of the price decline, such as the general level of interest rates or adverse conditions specifically related to the security, an industry or a geographic area;
- the issuer's financial condition, near-term prospects and ability to service the debt;
- the payment structure of the debt security and the likelihood of the issuer being able to make payments that increase in the future;
- for asset-backed securities, the credit performance of the underlying collateral, including delinquency rates, level of non-performing assets, cumulative losses to date, collateral value and the remaining credit enhancement compared with expected credit losses;
- any change in rating agencies' credit ratings and any likely imminent action;
- independent analyst reports and forecasts, sector credit ratings and other independent market data; and
- recoveries or additional declines in fair value subsequent to the balance sheet date.

If we intend to sell the security, or if it is more likely than not we will be required to sell the security before recovery of amortized cost basis, OTTI is recognized in earnings equal to the entire difference between the amortized cost basis and fair value of the security. For a debt security that is considered other-than-temporarily impaired that we do not intend to sell or it is more likely than not that we will not be required to sell before recovery, OTTI is separated into an amount representing the credit loss, which is recognized in earnings, and the amount related to all other factors, which is recognized in OCI. The measurement of the credit loss component is equal to the difference between the debt security's amortized cost basis and the present value of its expected future cash flows discounted at the security's effective yield. The remaining difference between the security's fair value and the present value of expected future cash flows is due to all other factors. We believe that we will fully collect the carrying value of securities on which we have recorded a non-credit-related impairment in OCI.

Following the recognition of OTTI, the security's new amortized cost basis is the previous basis less any OTTI recognized in earnings.

We recognize realized gains and losses on the sale of AFS debt securities in net gains (losses) on debt securities using the specific identification method.

Unamortized premiums and discounts are recognized in interest income over the contractual life of the security using the

Note 1: Summary of Significant Accounting Policies (continued)

effective interest method, except for purchased callable debt securities carried at a premium. For purchased callable debt securities carried at a premium, the premium is amortized into interest income to the earliest call date using the effective interest method. As principal repayments are received on securities (e.g., mortgage-backed securities (MBS)) a proportionate amount of the related premium or discount is recognized in income so that the effective interest rate on the remaining portion of the security continues unchanged.

HELD-TO-MATURITY DEBT SECURITIES Investments in debt securities for which the Company has the positive intent and ability to hold to maturity are classified as HTM. HTM debt securities are measured at historical cost adjusted for amortization of premiums and accretion of discounts under the same methods described for AFS debt securities. We recognize OTTI when there is a decline in fair value below amortized cost and we do not expect to recover the entire amortized cost basis of the debt security. The amortized cost is written-down to fair value with the credit loss component recorded to earnings and the remaining component recognized in OCI. The OTTI assessment related to intent to sell, required to sell, whether we expect recovery of the amortized cost basis and determination of any credit loss component recognized in earnings for HTM debt securities is the same as described for AFS debt securities. OTTI related to HTM debt securities is classified as net gains (losses) from debt securities within noninterest income. AFS debt securities transferred to the HTM classification are recorded at fair value and the unrealized gains or losses resulting from the transfer of these securities continue to be reported in cumulative OCI. The cumulative OCI balance is amortized into earnings over the same period as the unamortized premiums and discounts using the effective interest method. The HTM amortized cost basis used in the OTTI analysis includes the unamortized OCI balances related to previous security transfers from AFS to HTM.

Securities Purchased and Sold Agreements

Securities purchased under resale agreements and securities sold under repurchase agreements are accounted for as collateralized financing transactions and are recorded at the acquisition or sale price plus accrued interest. We monitor the fair value of securities purchased and sold as well as the collateral pledged and received. Additional collateral is pledged or returned to maintain the appropriate collateral position for the transactions. These financing transactions do not create material credit risk given the collateral provided and the related monitoring process.

Mortgage Loans and Loans Held for Sale

Mortgage loans held for sale (MLHFS) include commercial and residential mortgages originated for sale in the securitization or whole loan market. We have elected the fair value option for substantially all residential MLHFS (see Note 19 (Fair Values of Assets and Liabilities)). The remaining residential MLHFS are held at the lower of cost or fair value (LOCOM) and are measured on an aggregate portfolio basis. Commercial MLHFS are held at LOCOM and are measured on an individual loan basis.

Loans held for sale (LHFS) include commercial loans originated for sale and purchased loans used in market-making activities in our trading business. The loans held for trading purposes are carried at fair value, with the remainder of LHFS recorded at LOCOM. LHFS are measured on an individual loan basis.

Gains and losses on MLHFS are generally recorded in mortgage banking noninterest income. Gains and losses on LHFS

used in trading activities are recognized in net gains from trading activities. Gains and losses on LHFS not used in trading activities are recognized in other noninterest income. Direct loan origination costs and fees for MLHFS and LHFS under the fair value option are recognized in earnings at origination. For MLHFS and LHFS recorded at LOCOM, loan costs and fees are deferred at origination and are recognized in earnings at time of sale. Interest income on MLHFS and LHFS is calculated based upon the note rate of the loan and is recorded in interest income.

Our lines of business are authorized to originate held-for-investment loans that meet or exceed established loan product profitability criteria, including minimum positive net interest margin spreads in excess of funding costs. When a determination is made at the time of commitment to originate loans as held for investment, it is our intent to hold these loans to maturity or for the “foreseeable future,” subject to periodic review under our management evaluation processes, including corporate asset/liability management. In determining the “foreseeable future” for loans, management considers (1) the current economic environment and market conditions, (2) our business strategy and current business plans, (3) the nature and type of the loan receivable, including its expected life, and (4) our current financial condition and liquidity demands. If subsequent changes, including changes in interest rates, significantly impact the ongoing profitability of certain loan products, we may subsequently change our intent to hold these loans, and we would take actions to sell such loans. Upon such management determination, we immediately transfer these loans to the MLHFS or LHFS portfolio at LOCOM.

Loans

Loans are reported at their outstanding principal balances net of any unearned income, cumulative charge-offs, unamortized deferred fees and costs on originated loans and unamortized premiums or discounts on purchased loans. Purchased credit-impaired (PCI) loans are reported net of any remaining purchase accounting adjustments. See the “Purchased Credit-Impaired Loans” section in this Note for our accounting policy for PCI loans.

Unearned income, deferred fees and costs, and discounts and premiums are amortized to interest income over the contractual life of the loan using the effective interest method. Loan commitment fees are generally deferred and amortized into noninterest income on a straight-line basis over the commitment period.

Loans also include financing leases where we are the lessor. See the “Leasing Activity” section in this Note for our accounting policy for leases.

NONACCRUAL AND PAST DUE LOANS We generally place loans on nonaccrual status when:

- the full and timely collection of interest or principal becomes uncertain (generally based on an assessment of the borrower’s financial condition and the adequacy of collateral, if any), such as in bankruptcy or other circumstances;
- they are 90 days (120 days with respect to real estate 1-4 family mortgages) past due for interest or principal, unless both well-secured and in the process of collection;
- part of the principal balance has been charged off; or
- for junior lien mortgages, we have evidence that the related first lien mortgage may be 120 days past due or in the process of foreclosure regardless of the junior lien delinquency status.

Credit card loans are not placed on nonaccrual status, but are generally fully charged off when the loan reaches 180 days past due.

PCI loans are written down at acquisition to fair value using an estimate of cash flows deemed to be collectible and an accretible yield is established. Accordingly, such loans are not classified as nonaccrual because they continue to earn interest from accretible yield, independent of performance in accordance of their contractual terms, and we expect to fully collect the new carrying values of such loans (that is, the new cost basis arising out of purchase accounting).

When we place a loan on nonaccrual status, we reverse the accrued unpaid interest receivable against interest income and suspend amortization of any net deferred fees. If the ultimate collectability of the recorded loan balance is in doubt on a nonaccrual loan, the cost recovery method is used and cash collected is applied to first reduce the carrying value of the loan. Otherwise, interest income may be recognized to the extent cash is received. Generally, we return a loan to accrual status when all delinquent interest and principal become current under the terms of the loan agreement and collectability of remaining principal and interest is no longer doubtful.

We typically re-underwrite modified loans at the time of a restructuring to determine if there is sufficient evidence of sustained repayment capacity based on the borrower's financial strength, including documented income, debt to income ratios and other factors. If the borrower has demonstrated performance under the previous terms and the underwriting process shows the capacity to continue to perform under the restructured terms, the loan will generally remain in accruing status. When a loan classified as a troubled debt restructuring (TDR) performs in accordance with its modified terms, the loan either continues to accrue interest (for performing loans) or will return to accrual status after the borrower demonstrates a sustained period of performance (generally six consecutive months of payments, or equivalent, inclusive of consecutive payments made prior to the modification). Loans will be placed on nonaccrual status and a corresponding charge-off is recorded if we believe it is probable that principal and interest contractually due under the modified terms of the agreement will not be collectible.

Our loans are considered past due when contractually required principal or interest payments have not been made on the due dates.

LOAN CHARGE-OFF POLICIES For commercial loans, we generally fully charge off or charge down to net realizable value (fair value of collateral, less estimated costs to sell) for loans secured by collateral when:

- management judges the loan to be uncollectible;
- repayment is deemed to be protracted beyond reasonable time frames;
- the loan has been classified as a loss by either our internal loan review process or our banking regulatory agencies;
- the customer has filed bankruptcy and the loss becomes evident owing to a lack of assets; or
- the loan is 180 days past due unless both well-secured and in the process of collection.

For consumer loans, we fully charge off or charge down to net realizable value when deemed uncollectible due to bankruptcy or other factors, or no later than reaching a defined number of days past due, as follows:

- Real estate 1-4 family mortgages – We generally charge down to net realizable value when the loan is 180 days past due.
- Automobile loans – We generally fully charge off when the loan is 120 days past due.
- Credit card loans – We generally fully charge off when the loan is 180 days past due.
- Unsecured loans (closed end) – We generally fully charge off when the loan is 120 days past due.
- Unsecured loans (open end) – We generally fully charge off when the loan is 180 days past due.
- Other secured loans – We generally fully or partially charge down to net realizable value when the loan is 120 days past due.

IMPAIRED LOANS We consider a loan to be impaired when, based on current information and events, we determine that we will not be able to collect all amounts due according to the loan contract, including scheduled interest payments. This evaluation is generally based on delinquency information, an assessment of the borrower's financial condition and the adequacy of collateral, if any. Our impaired loans predominantly include loans on nonaccrual status in the commercial portfolio segment and loans modified in a TDR, whether on accrual or nonaccrual status.

When we identify a loan as impaired, we generally measure the impairment, if any, based on the difference between the recorded investment in the loan (net of previous charge-offs, deferred loan fees or costs and unamortized premium or discount) and the present value of expected future cash flows, discounted at the loan's pre-modification effective interest rate. When the value of an impaired loan is calculated by discounting expected cash flows, interest income is recognized using the loan's pre-modification effective interest rate over the remaining life of the loan. When collateral is the sole source of repayment for the impaired loan, rather than the borrower's income or other sources of repayment, we charge down to net realizable value.

TROUBLED DEBT RESTRUCTURINGS In situations where, for economic or legal reasons related to a borrower's financial difficulties, we grant a concession for other than an insignificant period of time to the borrower that we would not otherwise consider, the related loan is classified as a TDR. These modified terms may include interest rate reductions, principal forgiveness, term extensions, payment forbearance and other actions intended to minimize our economic loss and to avoid foreclosure or repossession of the collateral, if applicable. For modifications where we forgive principal, the entire amount of such principal forgiveness is immediately charged off. Loans classified as TDRs, including loans in trial payment periods (trial modifications), are considered impaired loans. Other than resolutions such as foreclosures, sales and transfers to held-for-sale, we may remove loans held for investment from TDR classification, but only if they have been refinanced or restructured at market terms and qualify as a new loan.

PURCHASED CREDIT-IMPAIRED LOANS Loans acquired with evidence of credit deterioration since their origination and where it is probable that we will not collect all contractually required principal and interest payments are PCI loans. PCI loans are recorded at fair value at the date of acquisition, and the historical allowance for credit losses related to these loans is not carried over. Fair value at date of acquisition is generally determined using a discounted cash flow method and any excess cash flow expected to be collected over the carrying value (estimated fair value at acquisition date) is referred to as the accretible yield

Note 1: Summary of Significant Accounting Policies (continued)

and is recognized in interest income using an effective yield method over the remaining life of the loan, or pool of loans if aggregated based on common risk characteristics. The difference between contractually required payments and the cash flows expected to be collected at acquisition, considering the impact of prepayments, is referred to as the nonaccretable difference. Based on quarterly evaluations of remaining cash flows expected to be collected, expected decreases may result in recording a provision for loss and expected increases may result in a prospective yield adjustment after first reversing any allowance for losses related to the loan, or pool of loans.

Resolutions of loans may include sales of loans to third parties, receipt of payments in settlement with the borrower, or foreclosure of the collateral. For individual PCI loans, gains or losses on sales to third parties are included in other noninterest income, and gains or losses as a result of a settlement with the borrower are included in interest income. Our policy is to remove an individual loan from a pool based on comparing the amount received from its resolution with its contractual amount. Any difference between these amounts is absorbed by the nonaccretable difference for the entire pool, which assumes that the amount received from resolution approximates pool performance expectations. Any material change in remaining effective yield caused by this removal method is addressed by our quarterly cash flow evaluation process for each pool. We may also sell groups of loans from a pool and include any gains or losses on sales to third parties in other noninterest income. Any difference between the amount received from the buyer and the contractual amount due from the customer is absorbed by the nonaccretable difference for the entire pool. We maintain the effective yield for the remaining loans in the pool consistent with the yield immediately prior to the sale.

Modified PCI loans are not removed from a pool even if those loans would otherwise be deemed TDRs. Modified PCI loans that are accounted for individually are considered TDRs and removed from PCI accounting if there has been a concession granted in excess of the original nonaccretable difference. We include these TDRs in our impaired loans.

FORECLOSED ASSETS Foreclosed assets obtained through our lending activities primarily include real estate. Generally, loans have been written down to their net realizable value prior to foreclosure. Any further reduction to their net realizable value is recorded with a charge to the allowance for credit losses at foreclosure. We allow up to 90 days after foreclosure to finalize determination of net realizable value. Thereafter, changes in net realizable value are recorded to noninterest expense. The net realizable value of these assets is reviewed and updated periodically depending on the type of property. Certain government-guaranteed mortgage loans upon foreclosure are included in accounts receivable, not foreclosed assets. These receivables were loans insured by the FHA or guaranteed by the VA and are measured based on the balance expected to be recovered from the FHA or VA.

ALLOWANCE FOR CREDIT LOSSES The allowance for credit losses (ACL) is management's estimate of credit losses inherent in the loan portfolio, including unfunded credit commitments, at the balance sheet date. We have an established process to determine the appropriateness of the ACL that assesses the losses inherent in our portfolio and related unfunded credit commitments. We develop and document our ACL methodology at the portfolio segment level – commercial loan portfolio and consumer loan portfolio. While we attribute portions of the ACL to our respective commercial and consumer portfolio segments, the

entire ACL is available to absorb credit losses inherent in the total loan portfolio and unfunded credit commitments.

Our process involves procedures to appropriately consider the unique risk characteristics of our commercial and consumer loan portfolio segments. For each portfolio segment, losses are estimated collectively for groups of loans with similar characteristics, individually or pooled for impaired loans or, for PCI loans, based on the changes in cash flows expected to be collected.

Our ACL amounts are influenced by loan volumes, loan grade migration or delinquency status, historic loss experience and other conditions influencing loss expectations, such as economic conditions.

Commercial Portfolio Segment ACL Methodology Generally, commercial loans are assessed for estimated losses by grading each loan using various risk factors as identified through periodic reviews. Our estimation approach for the commercial portfolio reflects the estimated probability of default in accordance with the borrower's financial strength and the severity of loss in the event of default, considering the quality of any underlying collateral. Probability of default and severity at the time of default are statistically derived through historical observations of default and losses after default within each credit risk rating. These estimates are adjusted as appropriate based on additional analysis of long-term average loss experience compared to previously forecasted losses, external loss data or other risks identified from current economic conditions and credit quality trends. The estimated probability of default and severity at the time of default are applied to loan equivalent exposures to estimate losses for unfunded credit commitments.

The ACL also includes an amount for the estimated impairment on nonaccrual commercial loans and commercial loans modified in a TDR, whether on accrual or nonaccrual status.

Consumer Portfolio Segment ACL Methodology For consumer loans that are not identified as a TDR, we generally determine the ACL on a collective basis utilizing forecasted losses to represent our best estimate of inherent loss. We pool loans, generally by product types with similar risk characteristics, such as residential real estate mortgages and credit cards. As appropriate and to achieve greater accuracy, we may further stratify selected portfolios by sub-product, origination channel, vintage, loss type, geographic location and other predictive characteristics. Models designed for each pool are utilized to develop the loss estimates. We use assumptions for these pools in our forecast models, such as historic delinquency and default, loss severity, home price trends, unemployment trends, and other key economic variables that may influence the frequency and severity of losses in the pool.

We separately estimate impairment for consumer loans that have been modified in a TDR (including trial modifications), whether on accrual or nonaccrual status.

Other ACL Matters The ACL for both portfolio segments includes an amount for imprecision or uncertainty that may change from period to period. This amount represents management's judgment of risks inherent in the processes and assumptions used in establishing the ACL. This imprecision considers economic environmental factors, modeling assumptions and performance, process risk, and other subjective factors, including industry trends and emerging risk assessments.

Leasing Activity

AS LESSOR We lease equipment to our customers under financing or operating leases. Financing leases are presented in loans and are recorded at the discounted amounts of lease payments receivable plus the estimated residual value of the leased asset. Leveraged leases, which are a form of financing leases, are reduced by related non-recourse debt from third-party investors. Lease payments receivable reflect contractual lease payments adjusted for renewal or termination options that we believe the customer is reasonably certain to exercise. The residual value reflects our best estimate of the expected sales price for the equipment at lease termination based on sales history adjusted for recent trends in the expected exit markets. Many of our leases allow the customer to extend the lease at prevailing market terms or purchase the asset for fair value at lease termination.

Our allowance for loan losses for financing leases considers both the collectability of the lease payments receivable as well as the estimated residual value of the leased asset. We typically purchase residual value insurance on our financing leases so that our risk of loss at lease termination will be less than 10% of the initial value of the lease. In addition, we have several channels for re-leasing or marketing those assets.

In connection with a lease, we may finance the customer's purchase of other products or services from the equipment vendor and allocate the contract consideration between the use of the asset and the purchase of those products or services based on information obtained from the vendor. Amounts allocated to financing of vendor products or services are reported in loans as commercial and industrial loans, rather than as lease financing.

Our primary income from financing leases is interest income recognized using the effective interest method. Variable lease revenues, such as reimbursement for property taxes associated with the leased asset, are included in lease income within noninterest income.

Operating lease assets are presented in other assets, net of accumulated depreciation. Periodic depreciation expense is recorded on a straight-line basis to the estimated residual value over the estimated useful life of the leased asset. On a periodic basis, operating lease assets are reviewed for impairment and impairment loss is recognized if the carrying amount of operating lease assets exceeds fair value and is not recoverable. The carrying amount of leased assets is deemed not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the lease payments and the estimated residual value upon the eventual disposition of the equipment. Depreciation of leased assets and impairment loss are presented in operating leases expense within other noninterest expense.

Operating lease rental income for leased assets is recognized in lease income within noninterest income on a straight-line basis over the lease term. Variable revenues on operating leases include reimbursements of costs, including property taxes, which fluctuate over time, as well as rental revenue based on usage. For leases of railcars, revenue for maintenance services provided under the lease is recognized in lease income.

We elected to exclude from revenues and expenses any sales tax incurred on lease payments which are reimbursed by the lessee. Substantially all of our leased assets are protected against casualty loss through third-party insurance.

AS LESSEE We enter into lease agreements to obtain the right to use assets for our business operations, substantially all of which are real estate. Lease liabilities and ROU assets are recognized

when we enter into operating or financing leases and represent our obligations and rights to use these assets over the period of the leases and may be re-measured for certain modifications, resolution of certain contingencies involving variable consideration, or our exercise of options (renewal, extension, or termination) under the lease.

Operating lease liabilities include fixed and in-substance fixed payments for the contractual duration of the lease, adjusted for renewals or terminations which were considered probable of exercise when measured. The lease payments are discounted using a rate determined when the lease is recognized. As we typically do not know the discount rate implicit in the lease, we estimate a discount rate that we believe approximates a collateralized borrowing rate for the estimated duration of the lease. The discount rate is updated when re-measurement events occur. The related operating lease ROU assets may differ from operating lease liabilities due to initial direct costs, deferred or prepaid lease payments and lease incentives.

We present operating lease liabilities in accrued expenses and other liabilities and the related operating lease ROU assets in other assets. The amortization of operating lease ROU assets and the accretion of operating lease liabilities are reported together as fixed lease expense and are included in net occupancy expense within noninterest expense. The fixed lease expense is recognized on a straight-line basis over the life of the lease.

Some of our operating leases include variable lease payments which are periodic adjustments of our payments for the use of the asset based on changes in factors such as consumer price indices, fair market value rents, tax rates imposed by taxing authorities, or lessor cost of insurance. To the extent not included in operating lease liabilities and operating lease ROU assets, these variable lease payments are recognized as incurred in net occupancy expense within noninterest expense.

For substantially all of our leased assets, we account for consideration paid under the contract for maintenance or other services as lease payments. In addition, for certain asset classes, we have elected to exclude leases with original terms of less than one year from the operating lease ROU assets and lease liabilities. The related short-term lease expense is included in net occupancy expense.

Finance lease (formerly capital lease) liabilities are presented in long-term debt and the associated finance ROU assets are presented in premises and equipment.

Securitizations and Beneficial Interests

Securitizations are transactions in which financial assets are sold to a Special Purpose Entity (SPE), which then issues beneficial interests in the form of senior and subordinated interests collateralized by the transferred financial assets. In some cases, we may obtain beneficial interests issued by the SPE. Additionally, from time to time, we may re-securitize certain financial assets in a new securitization transaction.

The assets and liabilities transferred to an SPE are excluded from our consolidated balance sheet if the transfer qualifies as a sale and we are not required to consolidate the SPE.

For transfers of financial assets recorded as sales, we recognize and initially measure at fair value all assets obtained (including beneficial interests or mortgage servicing rights) and all liabilities incurred. We record a gain or loss in noninterest income for the difference between assets obtained (net of liabilities incurred) and the carrying amount of the assets sold. Interests obtained from, and liabilities incurred in, securitizations with off-balance sheet entities may include debt and equity securities, loans, MSRs, derivative assets and liabilities, other

Note 1: Summary of Significant Accounting Policies (continued)

assets, and other obligations such as liabilities for mortgage repurchase losses or long-term debt and are accounted for as described within this Note.

Mortgage Servicing Rights

We recognize the rights to service mortgage loans for others, or mortgage servicing rights (MSRs), as assets whether we purchase the MSRs or the MSRs result from a sale or securitization of loans we originate (asset transfers). We initially record all of our MSRs at fair value. Subsequently, residential loan MSRs are carried at fair value. All of our MSRs related to our commercial mortgage loans are subsequently measured at LOCOM. The valuation and sensitivity of MSRs is discussed further in Note 10 (Securitizations and Variable Interest Entities), Note 11 (Mortgage Banking Activities) and Note 19 (Fair Values of Assets and Liabilities).

For MSRs carried at fair value, changes in fair value are reported in mortgage banking noninterest income in the period in which the change occurs. MSRs subsequently measured at LOCOM are amortized in proportion to, and over the period of, estimated net servicing income. The amortization of MSRs is reported in mortgage banking noninterest income, analyzed monthly and adjusted to reflect changes in prepayment speeds, as well as other factors.

MSRs accounted for at LOCOM are periodically evaluated for impairment based on the fair value of those assets. For purposes of impairment evaluation and measurement, we stratify MSRs based on the predominant risk characteristics of the underlying loans, including investor and product type. If, by individual stratum, the carrying amount of these MSRs exceeds fair value, a valuation allowance is established. The valuation allowance is adjusted as the fair value changes.

Premises and Equipment

Premises and equipment are carried at cost less accumulated depreciation and amortization. We use the straight-line method of depreciation and amortization. Estimated useful lives range up to 40 years for buildings, up to 10 years for furniture and equipment, and the shorter of the estimated useful life (up to 8 years) or the lease term for leasehold improvements.

Goodwill and Identifiable Intangible Assets

Goodwill is recorded in business combinations under the purchase method of accounting when the purchase price is higher than the fair value of net assets, including identifiable intangible assets.

We assess goodwill for impairment at a reporting unit level on an annual basis or more frequently in certain circumstances. We have determined that our reporting units are one level below the operating segments and distinguish these reporting units based on how the segments and reporting units are managed, taking into consideration the economic characteristics, nature of the products, and customers of the segments and reporting units. At the time we acquire a business, we allocate goodwill to applicable reporting units based on their relative fair value, and if we have a significant business reorganization, we may reallocate the goodwill. If we sell a business, a portion of goodwill is included with the carrying amount of the divested business.

We have the option of performing a qualitative assessment of goodwill. We may also elect to bypass the qualitative test and proceed directly to a quantitative test. If we perform a qualitative assessment of goodwill to test for impairment and conclude it is more likely than not that a reporting unit's fair value is greater than its carrying amount, quantitative tests are not required. However, if we determine it is more likely than not

that a reporting unit's fair value is less than its carrying amount, we complete a quantitative assessment to determine if there is goodwill impairment. We apply various quantitative valuation methodologies, including discounted cash flow and earnings multiple approaches, to determine the estimated fair value, which is compared to the carrying value of each reporting unit. If the fair value is less than the carrying amount, an additional test is required to measure the amount of impairment. We recognize impairment losses as a charge to other noninterest expense (unless related to discontinued operations) and an adjustment to the carrying value of the goodwill asset. Subsequent reversals of goodwill impairment are prohibited.

We amortize customer relationship intangible assets on an accelerated basis over useful lives not exceeding 10 years. We review intangible assets for impairment whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. Impairment is indicated if the sum of undiscounted estimated future net cash flows is less than the carrying value of the asset. Impairment is permanently recognized by writing down the asset to the extent that the carrying value exceeds the estimated fair value.

Derivatives and Hedging Activities

DERIVATIVES We recognize all derivatives on the balance sheet at fair value. On the date we enter into a derivative contract, we categorize the derivative as either an accounting hedge, economic hedge or part of our customer accommodation trading and other portfolio.

Accounting hedges are either fair value or cash flow hedges. Fair value hedges represent the hedge of the fair value of a recognized asset or liability or an unrecognized firm commitment, including hedges of foreign currency exposure. Cash flow hedges represent the hedge of a forecasted transaction or the variability of cash flows to be paid or received related to a recognized asset or liability.

Economic hedges and customer accommodation trading and other derivatives do not qualify for, or we have elected not to apply, hedge accounting. Economic hedges are derivatives we use to manage interest rate, foreign currency and certain other risks associated with our non-trading activities. Customer accommodation trading and other derivatives primarily represents derivatives related to our trading business activities. We report changes in the fair values of these derivatives in noninterest income.

FAIR VALUE HEDGES We record changes in the fair value of the derivative in income, except for certain derivatives in which a portion is recorded to OCI. We record basis adjustments to the amortized cost of the hedged asset or liability due to the changes in fair value related to the hedged risk with the offset recorded in earnings. We present derivative gains or losses in the same income statement category as the hedged asset or liability, as follows:

- For fair value hedges of interest rate risk, amounts are reflected in net interest income;
- For hedges of foreign currency risk, amounts representing the fair value changes less the accrual for periodic cash flow settlements are reflected in noninterest income. The periodic cash flow settlements are reflected in net interest income;
- For hedges of both interest rate risk and foreign currency risk, amounts representing the fair value change less the accrual for periodic cash flow settlements is attributed to both net interest income and noninterest income. The

periodic cash flow settlements are reflected in net interest income.

The entire derivative gain or loss is included in the assessment of hedge effectiveness for all fair value hedge relationships, except for hedges of foreign-currency denominated AFS debt securities and long-term debt liabilities hedged with cross-currency swaps. The change in fair value of these swaps attributable to cross-currency basis spread changes is excluded from the assessment of hedge effectiveness. The initial fair value of the excluded component is amortized to net interest income and the difference between changes in fair value of the excluded component and the amount recorded in earnings is recorded in OCI.

CASH FLOW HEDGES We record changes in the fair value of the derivative in OCI. We subsequently reclassify gains and losses from these changes in fair value from OCI to earnings in the same period(s) that the hedged transaction affects earnings and in the same income statement category as the hedged item. For cash flow hedges of interest rate risk associated with floating-rate commercial loans and long-term debt, these amounts are reflected in net interest income. For cash flow hedges of foreign currency risk associated with fixed-rate long-term debt, these amounts are reflected in net interest income. The entire gain or loss on these derivatives is included in the assessment of hedge effectiveness.

DOCUMENTATION AND EFFECTIVENESS ASSESSMENT FOR ACCOUNTING HEDGES For fair value and cash flow hedges qualifying for hedge accounting, we formally document at inception the relationship between hedging instruments and hedged items, our risk management objective, strategy and our evaluation of effectiveness for our hedge transactions. This process includes linking all derivatives designated as fair value or cash flow hedges to specific assets and liabilities on the balance sheet or to specific forecasted transactions. We assess hedge effectiveness using regression analysis, both at inception of the hedging relationship and on an ongoing basis. For fair value hedges, the regression analysis involves regressing the periodic change in fair value of the hedging instrument against the periodic changes in fair value of the asset or liability being hedged due to changes in the hedged risk(s). For cash flow hedges, the regression analysis involves regressing the periodic changes in fair value of the hedging instrument against the periodic changes in fair value of a hypothetical derivative. The hypothetical derivative has terms that identically match and offset the cash flows of the forecasted transaction being hedged due to changes in the hedged risk(s). The initial assessment for fair value and cash flow hedges includes an evaluation of the quantitative measures of the regression results used to validate the conclusion of high effectiveness. Periodically, as required, we also formally assess whether the derivative we designated in each hedging relationship is expected to be and has been highly effective in offsetting changes in fair values or cash flows of the hedged item using the regression analysis method.

DISCONTINUING HEDGE ACCOUNTING We discontinue hedge accounting prospectively when (1) a derivative is no longer highly effective in offsetting changes in the fair value or cash flows of a hedged item, (2) a derivative expires or is sold, terminated or exercised, (3) we elect to discontinue the designation of a derivative as a hedge, or (4) in a cash flow hedge, a derivative is de-designated because it is no longer probable that a forecasted transaction will occur.

When we discontinue fair value hedge accounting, we no longer adjust the previously hedged asset or liability for changes in fair value. The remaining cumulative adjustments to the hedged item and accumulated amounts reported in OCI are accounted for in the same manner as other components of the carrying amount of the asset or liability. For example, for financial debt instruments such as AFS debt securities, loans or long-term debt, these amounts are amortized into net interest income over the remaining life of the asset or liability similar to other amortized cost basis adjustments. If the hedged item is derecognized, the accumulated amounts reported in OCI are immediately reclassified to net interest income. If the derivative continues to be held after fair value hedge accounting ceases, we carry the derivative on the balance sheet at its fair value with changes in fair value included in noninterest income.

When we discontinue cash flow hedge accounting and it is probable that the forecasted transaction will occur, the accumulated amount reported in OCI at the de-designation date continues to be reported in OCI until the forecasted transaction affects earnings at which point the related OCI amount is reclassified to net interest income. If cash flow hedge accounting is discontinued and it is probable the forecasted transaction will no longer occur, the accumulated gains and losses reported in OCI at the de-designation date is immediately reclassified to noninterest income. If the derivative continues to be held after cash flow hedge accounting ceases, we carry the derivative on the balance sheet at its fair value with changes in fair value included in noninterest income.

EMBEDDED DERIVATIVES We may purchase or originate financial instruments that contain an embedded derivative. At inception of the financial instrument, we assess (1) if the economic characteristics of the embedded derivative are not clearly and closely related to the economic characteristics of the host contract, (2) if the financial instrument that embodies both the embedded derivative and the host contract is not measured at fair value with changes in fair value reported in earnings, and (3) if a separate instrument with the same terms as the embedded instrument would meet the definition of a derivative. If the embedded derivative meets all of these conditions, we separate it from the hybrid contract by recording the bifurcated derivative at fair value and the remaining host contract at the difference between the basis of the hybrid instrument and the fair value of the bifurcated derivative. The bifurcated derivative is carried at fair value with changes recorded in noninterest income and reported within the balance sheet as a derivative asset or liability. The accounting for the remaining host contract is the same as other assets and liabilities of a similar type and reported within the balance sheet based upon the accounting classification of the instrument.

COUNTERPARTY CREDIT RISK AND NETTING By using derivatives, we are exposed to counterparty credit risk, which is the risk that counterparties to the derivative contracts do not perform as expected. If a counterparty fails to perform, our counterparty credit risk is equal to the amount reported as a derivative asset on our balance sheet. The amounts reported as a derivative asset are derivative contracts in a gain position, and to the extent subject to legally enforceable master netting arrangements, net of derivatives in a loss position with the same counterparty and cash collateral received. We minimize counterparty credit risk through credit approvals, limits, monitoring procedures, executing master netting arrangements and obtaining collateral, where appropriate. Counterparty credit risk related to derivatives is considered in determining fair value and our

Note 1: Summary of Significant Accounting Policies (continued)

assessment of hedge effectiveness. To the extent derivatives subject to master netting arrangements meet the applicable requirements, including determining the legal enforceability of the arrangement, it is our policy to present derivative balances and related cash collateral amounts net on the balance sheet. We incorporate adjustments to reflect counterparty credit risk (credit valuation adjustments (CVA)) in determining the fair value of our derivatives. CVA, which considers the effects of enforceable master netting agreements and collateral arrangements, reflects market-based views of the credit quality of each counterparty. We estimate CVA based on observed credit spreads in the credit default swap market and indices indicative of the credit quality of the counterparties to our derivatives.

Cash collateral exchanged related to our interest rate derivatives, and certain commodity and equity derivatives, with centrally cleared counterparties is recorded as a reduction of the derivative fair value asset and liability balances, as opposed to separate non-derivative receivables or payables. This cash collateral, also referred to as variation margin, is exchanged based upon derivative fair value changes, typically on a one-day lag. For additional information on our derivatives and hedging activities, see Note 18 (Derivatives).

Equity Securities

Equity securities exclude investments that represent a controlling interest in the investee. Marketable equity securities have readily determinable fair values and include, but are not limited to securities used in our trading activities. Marketable equity securities are recorded at fair value with unrealized gains and losses, due to changes in fair value, reflected in net gains (losses) on equity securities within noninterest income. Realized and unrealized gains and losses from marketable equity securities related to our trading activity are recognized in net gains from trading activities. The remaining marketable equity securities realized and unrealized gains and losses are recognized in net gains from equity securities. Dividend income from marketable equity securities is recognized in interest income.

Nonmarketable equity securities do not have readily determinable fair values. These securities are accounted for under one of the following accounting methods:

- Fair value: This method is an election. The securities are recorded at fair value with unrealized gains or losses reflected in noninterest income;
- Equity method: This method is applied when we have the ability to exert significant influence over the investee. These securities are carried at cost and adjusted for our share of the investee's earnings or losses, less any dividends received and/or impairments;
- Cost method: This method is required for specific securities, such as Federal Reserve Bank stock and Federal Home Loan Bank stock. These investments are held at amortized cost less any impairments. If impaired, the carrying value is written down to the fair value of the security;
- Measurement alternative: This method is followed by all remaining nonmarketable equity securities. These securities are initially carried at amortized cost and are remeasured to fair value as of the date of an orderly observable transaction of the same or similar security of the same issuer. These securities are also adjusted for any impairments.

Equity method adjustments for our share of the investee's earnings or losses are recognized in other noninterest income. All other realized and unrealized gains and losses, including impairment losses, from nonmarketable equity securities are recognized in net gains from equity securities. Dividends from

equity method securities are recognized as a reduction of the investment carrying value. Dividend income from all other nonmarketable equity securities is recognized in interest income.

Our review for impairment for equity method, cost method and measurement alternative securities includes an analysis of the facts and circumstances of each security, the intent or requirement to sell the security, the expectations of cash flows, capital needs and the viability of its business model. For equity method and cost method investments, we reduce the asset's carrying value when we consider declines in value to be other than temporary. For securities accounted for under the measurement alternative, we reduce the asset value when the fair value is less than carrying value, without the consideration of recovery.

Pension Accounting

We sponsor a frozen noncontributory qualified defined benefit retirement plan, the Wells Fargo & Company Cash Balance Plan (Cash Balance Plan), which covers eligible employees of Wells Fargo. We also sponsor nonqualified defined benefit plans that provide supplemental defined benefit pension benefits to certain eligible employees. We account for our defined benefit pension plans using an actuarial model. Two principal assumptions in determining net periodic pension cost are the discount rate and the expected long-term rate of return on plan assets.

A discount rate is used to estimate the present value of our future pension benefit obligations. We use a consistent methodology to determine the discount rate using a yield curve with maturity dates that closely match the estimated timing of the expected benefit payments for our plans. The yield curve is derived from a broad-based universe of high-quality corporate bonds as of the measurement date.

Our determination of the reasonableness of our expected long-term rate of return on plan assets is highly quantitative by nature. We evaluate the current asset allocations and expected returns under two sets of conditions: (1) projected returns using several forward-looking capital market assumptions, and (2) historical returns for the main asset classes dating back to 1970 or the earliest period for which historical data was readily available for the asset classes included. Using long-term historical data allows us to capture multiple economic environments, which we believe is relevant when using historical returns. We place greater emphasis on the forward-looking return and risk assumptions than on historical results. We use the resulting projections to derive a base line expected rate of return and risk level for the Cash Balance Plan's prescribed asset mix. We evaluate the portfolio based on: (1) the established target asset allocations over short term (one-year) and longer term (ten-year) investment horizons, and (2) the range of potential outcomes over these horizons within specific standard deviations. We perform the above analyses to assess the reasonableness of our expected long-term rate of return on plan assets. We consider the expected rate of return to be a long-term average view of expected returns.

At year end, we re-measure our defined benefit plan liabilities and related plan assets and recognize any resulting actuarial gain or loss in other comprehensive income. We generally amortize net actuarial gain or loss in excess of a 5% corridor from accumulated OCI into net periodic pension cost over the estimated average remaining participation period, which at December 31, 2019, is 19 years. See Note 23 (Employee Benefits and Other Expenses) for additional information on our pension accounting.

Income Taxes

We file consolidated and separate company U.S. federal income tax returns, non-U.S. tax returns and various combined and separate company state tax returns.

We evaluate two components of income tax expense: current and deferred income tax expense. Current income tax expense represents our estimated taxes to be paid or refunded for the current period and includes income tax expense related to our uncertain tax positions. Uncertain tax positions that meet the more likely than not recognition threshold are measured to determine the amount of benefit to recognize. An uncertain tax position is measured at the largest amount of benefit that management believes has a greater than 50% likelihood of realization upon settlement. Tax benefits not meeting our realization criteria represent unrecognized tax benefits.

Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. We determine deferred income taxes using the balance sheet method. Under this method, the net deferred tax asset or liability is based on the tax effects of the differences between the book and tax basis of assets and liabilities, and enacted changes in tax rates and laws are recognized in the period in which they occur. Deferred tax assets are recognized subject to management's judgment that realization is more likely than not.

See Note 24 (Income Taxes) to Financial Statements in this Report for a further description of our provision for income taxes and related income tax assets and liabilities.

Stock-Based Compensation

We have stock-based employee compensation plans as more fully discussed in Note 21 (Common Stock and Stock Plans). Our Long-Term Incentive Compensation Plan provides for awards of incentive and nonqualified stock options, stock appreciation rights, restricted shares, restricted share rights (RSRs), performance share awards (PSAs) and stock awards without restrictions. We measure the cost of employee services received in exchange for an award of equity instruments, such as stock options, RSRs or PSAs, based on the fair value of the award on the grant date. The cost is recognized in commission and incentive compensation in our income statement normally over the vesting period of the award; awards with graded vesting are expensed on a straight-line method. Awards to team members who are retirement eligible at the grant date are subject to immediate expensing upon grant. Awards to team members who become retirement eligible before the final vesting date are expensed between the grant date and the date the team member becomes retirement eligible. Except for retirement and other limited circumstances, RSRs are canceled when employment ends.

Beginning in 2013, certain RSRs and all PSAs granted include discretionary conditions that can result in forfeiture and are measured at fair value initially and subsequently until the discretionary conditions end. For these awards, the associated compensation expense fluctuates with changes in our stock price. For PSAs, compensation expense also fluctuates based on the estimated outcome of meeting the performance conditions. The total expense that will be recognized on these awards cannot be finalized until the determination of the awards that will vest.

Earnings Per Common Share

We compute earnings per common share by dividing net income applicable to common stock (net income less dividends on preferred stock and the excess of consideration transferred over carrying value of preferred stock redeemed, if any) by the average number of common shares outstanding during the period. We compute diluted earnings per common share using net income applicable to common stock and adding the effect of common stock equivalents (e.g., stock options, restricted share rights, convertible debentures and warrants) that are dilutive to the average number of common shares outstanding during the period.

Fair Value of Assets and Liabilities

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is based on the exit price notion while maximizing the use of observable inputs and minimizing the use of unobservable inputs.

We measure our assets and liabilities at fair value when we are required to record them at fair value, when we have elected the fair value option, and to fulfill fair value disclosure requirements. Assets and liabilities are recorded at fair value on a recurring or nonrecurring basis. Assets and liabilities that are recorded at fair value on a recurring basis require a fair value measurement at each reporting period. Those that are recorded at fair value on a nonrecurring basis are adjusted to fair value only as required through the application of an accounting method such as LOCOM, the measurement alternative, or write-downs of individual assets. Measurements of fair value prioritize observable inputs, where available.

We classify our assets and liabilities measured at fair value based upon a three-level hierarchy that assigns the highest priority to unadjusted quoted prices in active markets and the lowest priority to unobservable inputs. The three levels are as follows:

- Level 1 - Valuation is based upon quoted prices for identical instruments traded in active markets.
- Level 2 - Valuation is based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
- Level 3 - Valuation is generated from techniques that use significant assumptions that are not observable in the market. These unobservable assumptions reflect estimates of assumptions that market participants would use in pricing the asset or liability. Valuation techniques include use of option pricing models, discounted cash flow models and similar techniques.

For valuations that use several inputs, the determination of whether that measurement is Level 2 or Level 3 is based on the significance of the unobservable inputs to the entire fair value measurement. See Note 19 (Fair Values of Assets and Liabilities) for a more detailed discussion of the valuation methodologies that we apply to our assets and liabilities.

Note 1: Summary of Significant Accounting Policies (continued)

Share Repurchases

From time to time we may enter into written repurchase plans pursuant to Rule 10b5-1 of the Securities Exchange Act of 1934, private forward repurchase contracts, or a combination of the two to complement our open-market common stock repurchase strategies. The stock repurchase transactions allow us to manage our share repurchases in a manner consistent with our capital plans submitted annually under the Comprehensive Capital Analysis and Review (CCAR) and to provide an economic benefit to the Company.

Under a Rule 10b5-1 repurchase plan, payments and receipt of repurchased shares settle on the same day. Shares repurchased reduce the total number of outstanding shares of common stock upon the settlement of each trade under the plan. During 2019 and 2018, we repurchased approximately 204 million and 12 million shares of our common stock, respectively, under Rule 10b5-1 repurchase plans. We had no shares repurchased under a Rule 10b5-1 repurchase plan during 2017.

We had no shares repurchased under private forward repurchase contracts in 2019. During 2018 and 2017, we repurchased approximately 82 million and 89 million shares of

our common stock, respectively, under these contracts. We had no unsettled private forward repurchase contracts at December 31, 2019, December 31, 2018, or December 31, 2017. Under private forward repurchase contract transactions, our payments to counterparties are recognized in permanent equity in the quarter paid and are not subject to re-measurement. The classification of the up-front payments as permanent equity assures that we have appropriate repurchase timing consistent with our capital plans, which contemplate a fixed dollar amount available per quarter for share repurchases pursuant to the Board of Governors of the Federal Reserve System (FRB) supervisory guidance. In return, the counterparty agrees to deliver a variable number of shares based on a per share discount to the volume-weighted average stock price over the contract period. There are no scenarios where the contracts would not either physically settle in shares or allow us to choose the settlement method. Our total number of outstanding shares of common stock is not reduced until settlement of the contract.

Supplemental Cash Flow Information

Significant noncash activities are presented in Table 1.2.

Table 1.2: Supplemental Cash Flow Information

(in millions)	Year ended December 31,		
	2019	2018	2017
Trading debt securities retained from securitization of MLHFS	\$ 40,650	37,265	52,435
Transfers from loans to MLHFS	6,330	5,366	5,500
Transfers from available-for-sale debt securities to held-to-maturity debt securities	13,833	16,479	50,405
Operating lease ROU assets acquired with operating lease liabilities (1)	5,804	—	—

(1) The year ended December 31, 2019, balance includes \$4.9 billion from adoption of ASU 2016-02 – Leases (Topic 842) and \$904 million attributable to new leases and changes from modified leases.

Subsequent Events

We have evaluated the effects of events that have occurred subsequent to December 31, 2019, and, except as disclosed in Note 17 (Legal Actions), Note 20 (Preferred Stock) and Note 27 (Operating Segments), there have been no material events that would require recognition in our 2019 consolidated financial statements or disclosure in the Notes to the consolidated financial statements.

Note 2: Business Combinations

There were no acquisitions during 2019 or 2018. As of December 31, 2019, we had no pending acquisitions.

During 2019, we completed the sale of our Institutional Retirement and Trust (IRT) business in July and the sale of our Eastdil Secured (Eastdil) business in October, recognizing pre-tax gains within other noninterest income of \$1.1 billion and \$362 million, respectively.

For the IRT business, we will continue to administer client assets at the direction of the buyer for up to 24 months from the closing date pursuant to a transition services agreement. The buyer will receive post-closing revenue from the client assets and will pay us a fee for certain costs that we incur to administer the client assets during the transition period. The transition services fee will be recognized as other noninterest income, and the expenses we incur will be recognized in the same manner as they were prior to the close of the sale. Transition period revenue is expected to approximate transition period expenses and is subject to downward adjustment as client assets transition to the buyer's platform. No IRT client assets were transitioned to the buyer's platform as of December 31, 2019. At December 31, 2019, we had assets under management (AUM) and assets under administration (AUA) associated with the IRT business of \$21 billion and \$915 billion, respectively.

During 2018, we completed the sale of Wells Fargo Shareowner Services in February, the sale of the automobile lending business of Reliable Financial Services, Inc., and Reliable Finance Holding Company in August, and the sale of 52 branches in Indiana, Ohio, Michigan and part of Wisconsin in November. Included with the branches sale were approximately \$2.0 billion of deposits.

Note 3: Cash, Loan and Dividend Restrictions

Cash and cash equivalents may be restricted as to usage or withdrawal. FRB regulations require that each of our subsidiary banks maintain reserve balances on deposit with the Federal Reserve Banks. Table 3.1 provides a summary of restrictions on cash equivalents in addition to the FRB reserve cash balance requirements.

Table 3.1: Nature of Restrictions on Cash Equivalents

(in millions)	Dec 31, 2019	Dec 31, 2018
Average required reserve balance for FRB (1)	\$ 11,374	12,428
Reserve balance for non-U.S. central banks	460	517
Segregated for benefit of brokerage customers under federal and other brokerage regulations	733	1,135
Related to consolidated variable interest entities (VIEs) that can only be used to settle liabilities of VIEs	300	147

(1) FRB required reserve balance represents average for the years ended December 31, 2019, and December 31, 2018.

Federal law restricts the amount and the terms of both credit and non-credit transactions between a bank and its nonbank affiliates. These covered transactions may not exceed 10% of the bank's capital and surplus (which for this purpose represents Tier 1 and Tier 2 capital, as calculated under the risk-based capital (RBC) guidelines, plus the balance of the ACL excluded from Tier 2 capital) with any single nonbank affiliate and 20% of the bank's capital and surplus with all its nonbank affiliates. Transactions that are extensions of credit may require collateral to be held to provide added security to the bank. For further discussion of RBC, see Note 29 (Regulatory and Agency Capital Requirements) in this Report.

Dividends paid by our subsidiary banks are subject to various federal and state regulatory limitations. Dividends that may be paid by a national bank without the express approval of the Office of the Comptroller of the Currency (OCC) are limited to that bank's retained net profits for the preceding two calendar years plus retained net profits up to the date of any dividend declaration in the current calendar year. Retained net profits, as defined by the OCC, consist of net income less dividends declared during the period.

We have a state-chartered subsidiary bank that is subject to state regulations that limit dividends. Under these provisions and regulatory limitations, our national and state-chartered subsidiary banks could have declared additional dividends of \$5.4 billion at December 31, 2019, without obtaining prior regulatory approval. We have elected to retain higher capital at our national and state-chartered subsidiary banks in order to meet internal capital policy minimums and regulatory requirements. Our nonbank subsidiaries are also limited by certain federal and state statutory provisions and regulations covering the amount of dividends that may be paid in any given year. In addition, under a Support Agreement dated June 28, 2017, as amended and restated on June 26, 2019, among Wells Fargo & Company, the parent holding company (the "Parent"), WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the "IHC"), Wells Fargo Bank, N.A., Wells Fargo Securities, LLC, Wells Fargo Clearing Services, LLC, and certain other direct and indirect subsidiaries of the Parent designated as material entities for resolution planning purposes or identified as related support entities in our resolution plan, the IHC may be restricted from making dividend payments to the Parent if certain liquidity and/or capital metrics fall below defined triggers, or if the Parent's board of directors authorizes it to file a case under the U.S. Bankruptcy Code. Based on retained earnings at December 31, 2019, our nonbank subsidiaries could have declared additional dividends of \$25.9 billion at December 31, 2019, without obtaining prior regulatory approval.

The FRB's Capital Plan Rule (codified at 12 CFR 225.8 of Regulation Y) establishes capital planning and prior notice and approval requirements for capital distributions including dividends by certain large bank holding companies. The FRB has also published guidance regarding its supervisory expectations for capital planning, including capital policies regarding the process relating to common stock dividend and repurchase decisions in the FRB's SR Letter 15-18. The effect of this guidance is to require the approval of the FRB (or specifically under the Capital Plan Rule, a notice of non-objection) for the repurchase or redemption of common or perpetual preferred stock as well as to raise the per share quarterly dividend from its current level of \$0.51 per share as declared by the Company's Board of Directors (Board) on January 28, 2020, payable on March 1, 2020.

Note 4: Trading Activities

Table 4.1 presents a summary of our trading assets and liabilities measured at fair value through earnings.

Table 4.1: Trading Assets and Liabilities

(in millions)	Dec 31, 2019	Dec 31, 2018
Trading assets:		
Debt securities	\$ 79,733	69,989
Equity securities	27,440	19,449
Loans held for sale	972	1,469
Gross trading derivative assets	34,825	29,216
Netting (1)	(21,463)	(19,807)
Total trading derivative assets	13,362	9,409
Total trading assets	121,507	100,316
Trading liabilities:		
Short sale	17,430	19,720
Gross trading derivative liabilities	33,861	28,717
Netting (1)	(26,074)	(21,178)
Total trading derivative liabilities	7,787	7,539
Total trading liabilities	\$ 25,217	27,259

(1) Represents balance sheet netting for trading derivative asset and liability balances, and trading portfolio level counterparty valuation adjustments.

Table 4.2 provides a summary of the net interest income earned from trading securities, and net gains and losses due to the realized and unrealized gains and losses from trading

activities. Net interest income also includes dividend income on trading securities and dividend expense on trading securities we have sold, but not yet purchased.

Table 4.2: Net Interest Income and Net Gains (Losses) on Trading Activities

(in millions)	Year ended December 31,		
	2019	2018	2017
Interest income:			
Debt securities	\$ 3,130	2,831	2,313
Equity securities	579	587	515
Loans held for sale	78	62	38
Total interest income	3,787	3,480	2,866
Less: Interest expense	525	587	416
Net interest income	3,262	2,893	2,450
Net gains (losses) from trading activities (1):			
Debt securities	1,053	(824)	125
Equity securities	4,795	(4,240)	3,394
Loans held for sale	12	(1)	45
Derivatives (2)	(4,867)	5,667	(3,022)
Total net gains from trading activities	993	602	542
Total trading-related net interest and noninterest income	\$ 4,255	3,495	2,992

(1) Represents realized gains (losses) from our trading activities and unrealized gains (losses) due to changes in fair value of our trading positions.

(2) Excludes economic hedging of mortgage banking and asset/liability management activities, for which hedge results (realized and unrealized) are reported with the respective hedged activities.

Note 5: Available-for-Sale and Held-to-Maturity Debt Securities

Table 5.1 provides the amortized cost and fair value by major categories of available-for-sale debt securities, which are carried at fair value, and held-to-maturity debt securities, which are carried at amortized cost. The net unrealized gains (losses) for

available-for-sale debt securities are reported on an after-tax basis as a component of cumulative OCI. Information on debt securities held for trading is included in Note 4 (Trading Activities).

Table 5.1: Amortized Cost and Fair Value

(in millions)	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
December 31, 2019				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ 14,948	13	(1)	14,960
Securities of U.S. states and political subdivisions (1)	39,381	992	(36)	40,337
Mortgage-backed securities:				
Federal agencies	160,318	2,299	(164)	162,453
Residential	814	14	(1)	827
Commercial	3,899	41	(6)	3,934
Total mortgage-backed securities	165,031	2,354	(171)	167,214
Corporate debt securities	6,343	252	(32)	6,563
Collateralized loan and other debt obligations	29,693	125	(123)	29,695
Other (2)	4,664	50	(24)	4,690
Total available-for-sale debt securities	260,060	3,786	(387)	263,459
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	45,541	617	(19)	46,139
Securities of U.S. states and political subdivisions	13,486	286	(13)	13,759
Federal agency and other mortgage-backed securities (3)	94,869	2,093	(37)	96,925
Other debt securities	37	—	—	37
Total held-to-maturity debt securities	153,933	2,996	(69)	156,860
Total (4)	\$ 413,993	6,782	(456)	420,319
December 31, 2018				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ 13,451	3	(106)	13,348
Securities of U.S. states and political subdivisions (1)	48,994	716	(446)	49,264
Mortgage-backed securities:				
Federal agencies	155,974	369	(3,140)	153,203
Residential	2,638	142	(5)	2,775
Commercial	4,207	40	(22)	4,225
Total mortgage-backed securities	162,819	551	(3,167)	160,203
Corporate debt securities	6,230	131	(90)	6,271
Collateralized loan and other debt obligations	35,581	158	(396)	35,343
Other (2)	5,396	100	(13)	5,483
Total available-for-sale debt securities	272,471	1,659	(4,218)	269,912
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	44,751	4	(415)	44,340
Securities of U.S. states and political subdivisions	6,286	30	(116)	6,200
Federal agency and other mortgage-backed securities (3)	93,685	112	(2,288)	91,509
Other debt securities	66	—	—	66
Total held-to-maturity debt securities	144,788	146	(2,819)	142,115
Total (4)	\$ 417,259	1,805	(7,037)	412,027

(1) Includes investments in tax-exempt preferred debt securities issued by investment funds or trusts that predominantly invest in tax-exempt municipal securities. The amortized cost and fair value of these types of securities was \$5.8 billion each at December 31, 2019, and \$6.3 billion each at December 31, 2018.

(2) Largely includes asset-backed securities collateralized by student loans.

(3) Predominantly consists of federal agency mortgage-backed securities at both December 31, 2019, and December 31, 2018.

(4) We held debt securities from Federal National Mortgage Association (FNMA) and Federal Home Loan Mortgage Corporation (FHLMC) that each exceeded 10% of shareholders' equity, with an amortized cost of \$112.1 billion and \$89.9 billion and a fair value of \$114.0 billion and \$91.4 billion at December 31, 2019, and an amortized cost of \$99.0 billion and \$95.0 billion and a fair value of \$97.6 billion and \$93.0 billion at December 31, 2018, respectively.

Gross Unrealized Losses and Fair Value

Table 5.2 shows the gross unrealized losses and fair value of available-for-sale and held-to-maturity debt securities by length of time those individual securities in each category have been in a continuous loss position. Debt securities on which we have taken

credit-related OTTI write-downs are categorized as being “less than 12 months” or “12 months or more” in a continuous loss position based on the point in time that the fair value declined to below the cost basis and not the period of time since the credit-related OTTI write-down.

Table 5.2: Gross Unrealized Losses and Fair Value

(in millions)	Less than 12 months		12 months or more		Total	
	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value
December 31, 2019						
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	\$ —	—	(1)	2,423	(1)	2,423
Securities of U.S. states and political subdivisions	(10)	2,776	(26)	2,418	(36)	5,194
Mortgage-backed securities:						
Federal agencies	(50)	16,807	(114)	10,641	(164)	27,448
Residential	(1)	149	—	—	(1)	149
Commercial	(3)	998	(3)	244	(6)	1,242
Total mortgage-backed securities	(54)	17,954	(117)	10,885	(171)	28,839
Corporate debt securities	(9)	303	(23)	216	(32)	519
Collateralized loan and other debt obligations	(13)	5,070	(110)	16,789	(123)	21,859
Other	(12)	1,587	(12)	492	(24)	2,079
Total available-for-sale debt securities	(98)	27,690	(289)	33,223	(387)	60,913
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	(19)	989	—	—	(19)	989
Securities of U.S. states and political subdivisions	(9)	613	(4)	57	(13)	670
Federal agency and other mortgage-backed securities	(35)	5,825	(2)	31	(37)	5,856
Total held-to-maturity debt securities	(63)	7,427	(6)	88	(69)	7,515
Total	\$ (161)	35,117	(295)	33,311	(456)	68,428
December 31, 2018						
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	\$ (1)	498	(105)	6,204	(106)	6,702
Securities of U.S. states and political subdivisions	(73)	9,746	(373)	9,017	(446)	18,763
Mortgage-backed securities:						
Federal agencies	(42)	10,979	(3,098)	112,252	(3,140)	123,231
Residential	(3)	398	(2)	69	(5)	467
Commercial	(20)	1,972	(2)	79	(22)	2,051
Total mortgage-backed securities	(65)	13,349	(3,102)	112,400	(3,167)	125,749
Corporate debt securities	(64)	1,965	(26)	298	(90)	2,263
Collateralized loan and other debt obligations	(388)	28,306	(8)	553	(396)	28,859
Other	(7)	819	(6)	159	(13)	978
Total available-for-sale debt securities	(598)	54,683	(3,620)	128,631	(4,218)	183,314
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	(3)	895	(412)	41,083	(415)	41,978
Securities of U.S. states and political subdivisions	(4)	598	(112)	3,992	(116)	4,590
Federal agency and other mortgage-backed securities	(5)	4,635	(2,283)	77,741	(2,288)	82,376
Total held-to-maturity debt securities	(12)	6,128	(2,807)	122,816	(2,819)	128,944
Total	\$ (610)	60,811	(6,427)	251,447	(7,037)	312,258

Note 5: Available-for-Sale and Held-to-Maturity Debt Securities (continued)

We have assessed each debt security with gross unrealized losses included in the previous table for credit impairment. As part of that assessment we evaluated and concluded that we do not intend to sell any of the debt securities, and that it is more likely than not that we will not be required to sell, prior to recovery of the amortized cost basis. We evaluate, where necessary, whether credit impairment exists by comparing the present value of the expected cash flows to the debt securities' amortized cost basis.

For descriptions of the factors we consider when analyzing debt securities for impairment, see Note 1 (Summary of Significant Accounting Policies) and below.

SECURITIES OF U.S. TREASURY AND FEDERAL AGENCIES AND FEDERAL AGENCY MORTGAGE-BACKED SECURITIES (MBS) The unrealized losses associated with U.S. Treasury and federal agency securities and federal agency MBS are generally driven by changes in interest rates and not due to credit losses given the explicit or implicit guarantees provided by the U.S. government.

SECURITIES OF U.S. STATES AND POLITICAL SUBDIVISIONS The unrealized losses associated with securities of U.S. states and political subdivisions are usually driven by changes in the relationship between municipal and term funding credit curves rather than by changes to the credit quality of the underlying securities. Substantially all of these investments with unrealized losses are investment grade. The securities were generally underwritten in accordance with our own investment standards prior to the decision to purchase. Some of these securities are guaranteed by a bond insurer, but we did not rely on this guarantee when making our investment decision. These investments will continue to be monitored as part of our ongoing impairment analysis but are expected to perform, even if the rating agencies reduce the credit rating of the bond insurers. As a result, we expect to recover the entire amortized cost basis of these securities.

RESIDENTIAL AND COMMERCIAL MBS The unrealized losses associated with private residential MBS and commercial MBS are generally driven by changes in projected collateral losses, credit spreads and interest rates. We assess for credit impairment by estimating the present value of expected cash flows. The key assumptions for determining expected cash flows include default rates, loss severities and/or prepayment rates. We estimate security losses by forecasting the underlying mortgage loans in each transaction. We use forecasted loan performance to project cash flows to the various tranches in the structure. We also consider cash flow forecasts and, as applicable, independent industry analyst reports and forecasts, sector credit ratings, and other independent market data. Based upon our assessment of the expected credit losses and the credit enhancement level of the securities, we expect to recover the entire amortized cost basis of these securities.

CORPORATE DEBT SECURITIES The unrealized losses associated with corporate debt securities are predominantly related to unsecured debt obligations issued by various corporations. We evaluate the financial performance of each issuer on a quarterly basis to determine if the issuer can make all contractual principal and interest payments. Based upon this assessment, we expect to recover the entire amortized cost basis of these securities.

COLLATERALIZED LOAN AND OTHER DEBT OBLIGATIONS The unrealized losses associated with collateralized loan and other debt obligations relate to securities predominantly backed by commercial collateral. The unrealized losses are typically driven by changes in projected collateral losses, credit spreads and interest rates. We assess for credit impairment by estimating the present value of expected cash flows. The key assumptions for determining expected cash flows include default rates, loss severities and prepayment rates. We also consider cash flow forecasts and, as applicable, independent industry analyst reports and forecasts, sector credit ratings, and other independent market data. Based upon our assessment of the expected credit losses and the credit enhancement level of the securities, we expect to recover the entire amortized cost basis of these securities.

OTHER DEBT SECURITIES The unrealized losses associated with other debt securities predominantly relate to other asset-backed securities. The losses are usually driven by changes in projected collateral losses, credit spreads and interest rates. We assess for credit impairment by estimating the present value of expected cash flows. The key assumptions for determining expected cash flows include default rates, loss severities and prepayment rates. Based upon our assessment of the expected credit losses and the credit enhancement level of the securities, we expect to recover the entire amortized cost basis of these securities.

OTHER DEBT SECURITIES MATTERS The fair values of our debt securities could decline in the future if the underlying performance of the collateral for the residential and commercial MBS or other securities deteriorate, and our credit enhancement levels do not provide sufficient protection to our contractual principal and interest. As a result, there is a risk that significant OTTI may occur in the future.

Table 5.3 shows the gross unrealized losses and fair value of the available-for-sale and held-to-maturity debt securities by those rated investment grade and those rated less than investment grade, according to their lowest credit rating by Standard & Poor's Rating Services (S&P) or Moody's Investors Service (Moody's). Credit ratings express opinions about the credit quality of a debt security. Debt securities rated investment grade, that is those rated BBB- or higher by S&P or Baa3 or higher by Moody's, are generally considered by the rating agencies and market participants to be low credit risk. Conversely, debt securities rated below investment grade, labeled as "speculative grade" by the rating agencies, are

considered to be distinctively higher credit risk than investment grade debt securities. We have also included debt securities not rated by S&P or Moody's in the table below based on our internal credit grade of the debt securities (used for credit risk management purposes) equivalent to the credit rating assigned by major credit agencies. The unrealized losses and fair value of unrated debt securities categorized as investment grade based on internal credit grades were \$7 million and \$2.2 billion, respectively, at December 31, 2019, and \$20 million and \$5.2 billion, respectively, at December 31, 2018. If an internal credit grade was not assigned, we categorized the debt security as non-investment grade.

Table 5.3: Gross Unrealized Losses and Fair Value by Investment Grade

(in millions)	Investment grade		Non-investment grade	
	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value
December 31, 2019				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ (1)	2,423	—	—
Securities of U.S. states and political subdivisions	(32)	5,019	(4)	175
Mortgage-backed securities:				
Federal agencies	(164)	27,448	—	—
Residential	(1)	149	—	—
Commercial	(3)	1,158	(3)	84
Total mortgage-backed securities	(168)	28,755	(3)	84
Corporate debt securities	(3)	155	(29)	364
Collateralized loan and other debt obligations	(123)	21,859	—	—
Other	(13)	1,499	(11)	580
Total available-for-sale debt securities	(340)	59,710	(47)	1,203
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	(19)	989	—	—
Securities of U.S. states and political subdivisions	(13)	670	—	—
Federal agency and other mortgage-backed securities	(25)	5,428	(12)	428
Total held-to-maturity debt securities	(57)	7,087	(12)	428
Total	\$ (397)	66,797	(59)	1,631
December 31, 2018				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ (106)	6,702	—	—
Securities of U.S. states and political subdivisions	(425)	18,447	(21)	316
Mortgage-backed securities:				
Federal agencies	(3,140)	123,231	—	—
Residential	(2)	295	(3)	172
Commercial	(20)	1,999	(2)	52
Total mortgage-backed securities	(3,162)	125,525	(5)	224
Corporate debt securities	(17)	791	(73)	1,472
Collateralized loan and other debt obligations	(396)	28,859	—	—
Other	(7)	726	(6)	252
Total available-for-sale debt securities	(4,113)	181,050	(105)	2,264
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	(415)	41,978	—	—
Securities of U.S. states and political subdivisions	(116)	4,590	—	—
Federal agency and other mortgage-backed securities	(2,278)	81,977	(10)	399
Total held-to-maturity debt securities	(2,809)	128,545	(10)	399
Total	\$ (6,922)	309,595	(115)	2,663

Note 5: Available-for-Sale and Held-to-Maturity Debt Securities (continued)

Contractual Maturities

Table 5.4 shows the remaining contractual maturities and contractual weighted-average yields (taxable-equivalent basis) of available-for-sale debt securities. The remaining contractual

principal maturities for MBS do not consider prepayments. Remaining expected maturities will differ from contractual maturities because borrowers may have the right to prepay obligations before the underlying mortgages mature.

Table 5.4: Available-for-Sale Debt Securities – Fair Value by Contractual Maturity

(in millions)	Total amount	Yield	Remaining contractual maturity							
			Within one year		After one year through five years		After five years through ten years		After ten years	
			Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
December 31, 2019										
Available-for-sale debt securities (1):										
Fair value:										
Securities of U.S. Treasury and federal agencies	\$ 14,960	1.96%	\$ 9,980	1.88%	\$ 4,674	2.12%	\$ 46	1.83%	\$ 260	2.25%
Securities of U.S. states and political subdivisions	40,337	4.82	2,687	2.91	3,208	3.31	4,245	3.21	30,197	5.38
Mortgage-backed securities:										
Federal agencies	162,453	3.43	—	—	152	3.40	1,326	2.52	160,975	3.44
Residential	827	2.78	—	—	—	—	—	—	827	2.78
Commercial	3,934	3.44	—	—	31	4.03	235	3.22	3,668	3.45
Total mortgage-backed securities	167,214	3.43	—	—	183	3.51	1,561	2.62	165,470	3.43
Corporate debt securities	6,563	4.83	460	5.37	2,251	4.93	3,070	4.64	782	4.98
Collateralized loan and other debt obligations	29,695	3.33	—	—	—	—	12,137	3.43	17,558	3.27
Other	4,690	2.57	35	4.16	687	3.15	1,408	1.80	2,560	2.81
Total available-for-sale debt securities at fair value	\$ 263,459	3.57%	\$ 13,162	2.22%	\$ 11,003	3.12%	\$ 22,467	3.39%	\$ 216,827	3.69%

(1) Weighted-average yields displayed by maturity bucket are weighted based on fair value and predominantly represent contractual coupon rates without effect for any related hedging derivatives.

Table 5.5 shows the amortized cost and weighted-average yields of held-to-maturity debt securities by contractual maturity.

Table 5.5: Held-to-Maturity Debt Securities – Amortized Cost by Contractual Maturity

(in millions)	Total amount	Yield	Remaining contractual maturity							
			Within one year		After one year through five years		After five years through ten years		After ten years	
			Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
December 31, 2019										
Held-to-maturity debt securities (1):										
Amortized cost:										
Securities of U.S. Treasury and federal agencies	\$ 45,541	2.12%	\$ 1,296	1.75%	\$ 42,242	2.13%	\$ 1,244	2.00%	\$ 759	2.33%
Securities of U.S. states and political subdivisions	13,486	4.89	—	—	87	5.95	1,866	4.80	11,533	4.90
Federal agency and other mortgage-backed securities	94,869	3.08	—	—	15	3.10	—	—	94,854	3.08
Other debt securities	37	3.18	—	—	—	—	37	3.18	—	—
Total held-to-maturity debt securities at amortized cost	\$ 153,933	2.95%	\$ 1,296	1.75%	\$ 42,344	2.14%	\$ 3,147	3.68%	\$ 107,146	3.27%

(1) Weighted-average yields displayed by maturity bucket are weighted based on amortized cost and predominantly represent contractual coupon rates.

Table 5.6 shows the fair value of held-to-maturity debt securities by contractual maturity.

Table 5.6: Held-to-Maturity Debt Securities – Fair Value by Contractual Maturity

(in millions)	Total amount	Remaining contractual maturity			
		Within one year Amount	After one year through five years Amount	After five years through ten years Amount	After ten years Amount
December 31, 2019					
Held-to-maturity debt securities:					
Fair value:					
Securities of U.S. Treasury and federal agencies	\$ 46,139	1,301	42,830	1,268	740
Securities of U.S. states and political subdivisions	13,759	—	87	1,940	11,732
Federal agency and other mortgage-backed securities	96,925	—	15	—	96,910
Other debt securities	37	—	—	37	—
Total held-to-maturity debt securities at fair value	\$ 156,860	1,301	42,932	3,245	109,382

Realized Gains and Losses

Table 5.7 shows the gross realized gains and losses on sales and OTTI write-downs related to available-for-sale debt securities.

Table 5.7: Realized Gains and Losses

(in millions)	Year ended December 31,		
	2019	2018	2017
Gross realized gains	\$ 227	155	948
Gross realized losses	(24)	(19)	(207)
OTTI write-downs	(63)	(28)	(262)
Net realized gains from available-for-sale debt securities	\$ 140	108	479

Other-Than-Temporary Impaired Debt Securities

Table 5.8 shows the detail of total OTTI write-downs included in earnings for available-for-sale debt securities. There were no OTTI write-downs on held-to-maturity debt securities during the years ended December 31, 2019, 2018 or 2017.

Table 5.8: Detail of OTTI Write-downs

(in millions)	Year ended December 31,		
	2019	2018	2017
Debt securities OTTI write-downs included in earnings:			
Securities of U.S. states and political subdivisions	\$ 33	2	150
Mortgage-backed securities:			
Residential	—	4	11
Commercial	17	18	80
Corporate debt securities	13	—	21
Other debt securities	—	4	—
Total debt securities OTTI write-downs included in earnings	\$ 63	28	262

Note 5: Available-for-Sale and Held-to-Maturity Debt Securities (continued)

Table 5.9 shows the detail of OTTI write-downs on available-for-sale debt securities included in earnings and the related changes in OCI for the same securities.

Table 5.9: OTTI Write-downs Included in Earnings and the Related Changes in OCI

(in millions)	Year ended December 31,		
	2019	2018	2017
OTTI on debt securities			
Recorded as part of gross realized losses:			
Credit-related OTTI	\$ 27	27	119
Intent-to-sell OTTI	36	1	143
Total recorded as part of gross realized losses	63	28	262
Changes to OCI for losses (reversal of losses) in non-credit-related OTTI (1):			
Securities of U.S. states and political subdivisions	(1)	(2)	(5)
Residential mortgage-backed securities	(1)	2	(1)
Commercial mortgage-backed securities	2	(11)	(51)
Other debt securities	1	—	—
Total changes to OCI for non-credit-related OTTI	1	(11)	(57)
Total OTTI losses recorded on debt securities	\$ 64	17	205

(1) Represents amounts recorded to OCI for impairment of debt securities, due to factors other than credit that have also had credit-related OTTI write-downs during the period. Increases represent initial or subsequent non-credit-related OTTI on debt securities. Decreases represent partial to full reversal of impairment due to recoveries in the fair value of debt securities due to non-credit factors.

Table 5.10 presents a rollforward of the OTTI credit loss that has been recognized in earnings as a write-down of available-for-sale debt securities we still own (referred to as “credit-impaired” debt securities) and do not intend to sell. We have not recognized OTTI on held-to-maturity debt securities we still

own. Recognized credit loss represents the difference between the present value of expected future cash flows discounted using the security’s current effective interest rate and the amortized cost basis of the security prior to considering credit loss.

Table 5.10: Rollforward of OTTI Credit Loss

(in millions)	Year ended December 31,		
	2019	2018	2017
Credit loss recognized, beginning of year	\$ 562	742	1,043
Additions:			
For securities with initial credit impairments	6	1	9
For securities with previous credit impairments	21	26	110
Total additions	27	27	119
Reductions:			
For securities sold, matured, or intended/required to be sold	(390)	(204)	(414)
For recoveries of previous credit impairments (1)	—	(3)	(6)
Total reductions	(390)	(207)	(420)
Credit loss recognized, end of year	\$ 199	562	742

(1) Recoveries of previous credit impairments result from increases in expected cash flows subsequent to credit loss recognition. Such recoveries are reflected prospectively as interest yield adjustments using the effective interest method.

Note 6: Loans and Allowance for Credit Losses

Table 6.1 presents total loans outstanding by portfolio segment and class of financing receivable. Outstanding balances include unearned income, net deferred loan fees or costs, and unamortized discounts and premiums. These amounts were less than 1% of our total loans outstanding at December 31, 2019, and December 31, 2018.

Table 6.1: Loans Outstanding

(in millions)	December 31,				
	2019	2018	2017	2016	2015
Commercial:					
Commercial and industrial	\$ 354,125	350,199	333,125	330,840	299,892
Real estate mortgage	121,824	121,014	126,599	132,491	122,160
Real estate construction	19,939	22,496	24,279	23,916	22,164
Lease financing	19,831	19,696	19,385	19,289	12,367
Total commercial	515,719	513,405	503,388	506,536	456,583
Consumer:					
Real estate 1-4 family first mortgage	293,847	285,065	284,054	275,579	273,869
Real estate 1-4 family junior lien mortgage	29,509	34,398	39,713	46,237	53,004
Credit card	41,013	39,025	37,976	36,700	34,039
Automobile	47,873	45,069	53,371	62,286	59,966
Other revolving credit and installment	34,304	36,148	38,268	40,266	39,098
Total consumer	446,546	439,705	453,382	461,068	459,976
Total loans	\$ 962,265	953,110	956,770	967,604	916,559

Our non-U.S. loans are reported by respective class of financing receivable in the table above. Substantially all of our non-U.S. loan portfolio is commercial loans. Table 6.2 presents total non-U.S. commercial loans outstanding by class of financing receivable.

Table 6.2: Non-U.S. Commercial Loans Outstanding

(in millions)	December 31,				
	2019	2018	2017	2016	2015
Non-U.S. commercial loans:					
Commercial and industrial	\$ 70,494	62,564	60,106	55,396	49,049
Real estate mortgage	7,004	6,731	8,033	8,541	8,350
Real estate construction	1,434	1,011	655	375	444
Lease financing	1,220	1,159	1,126	972	274
Total non-U.S. commercial loans	\$ 80,152	71,465	69,920	65,284	58,117

Note 6: Loans and Allowance for Credit Losses (continued)

Loan Concentrations

Loan concentrations may exist when there are amounts loaned to borrowers engaged in similar activities or similar types of loans extended to a diverse group of borrowers that would cause them to be similarly impacted by economic or other conditions. Commercial and industrial loans and lease financing to borrowers in the financial institutions except banks industry represented 12% and 11% of total loans at December 31, 2019 and 2018, respectively. At December 31, 2019 and 2018, we did not have concentrations representing 10% or more of our total loan portfolio in the commercial real estate (CRE) portfolios (real estate mortgage and real estate construction) by state or property type. Real estate 1-4 family non-PCI mortgage loans to borrowers in the state of California represented 13% and 12% of total loans at December 31, 2019 and 2018, respectively, and PCI loans were under 1% in both years. These California loans are generally diversified among the larger metropolitan areas in California, with no single area consisting of more than 5% of total loans. We continuously monitor changes in real estate values and underlying economic or market conditions for all geographic areas of our real estate 1-4 family mortgage portfolio as part of our credit risk management process.

Some of our real estate 1-4 family mortgage loans include an interest-only feature as part of the loan terms. These interest-only loans were approximately 3% and 4% of total loans at December 31, 2019 and 2018, respectively. Substantially all of these interest-only loans at origination were considered to be prime or near prime. We do not offer option adjustable-rate mortgage (ARM) products, nor do we offer variable-rate mortgage products with fixed payment amounts, commonly referred to within the financial services industry as negative amortizing mortgage loans. We acquired an option payment loan portfolio (Pick-a-Pay) from Wachovia with a majority of the portfolio identified as PCI loans. Since the acquisition, we have reduced our exposure to the option payment portion of the portfolio through our modification efforts and loss mitigation actions. At December 31, 2019, these option payment loans were less than 1% of total loans.

Our first and junior lien lines of credit products generally have draw periods of 10, 15 or 20 years, with variable interest rate and payment options during the draw period of (1) interest only or (2) 1.5% of total outstanding balance plus accrued

interest. During the draw period, the borrower has the option of converting all or a portion of the line from a variable interest rate to a fixed rate with terms including interest-only payments for a fixed period between three to seven years or a fully amortizing payment with a fixed period between five to 30 years. At the end of the draw period, a line of credit generally converts to an amortizing payment schedule with repayment terms of up to 30 years based on the balance at time of conversion. At December 31, 2019, our lines of credit portfolio had an outstanding balance of \$37.9 billion, of which \$9.1 billion, or 24%, is in its amortization period, another \$1.6 billion, or 4%, of our total outstanding balance, will reach their end of draw period during 2020 through 2021, \$11.1 billion, or 29%, during 2022 through 2024, and \$16.1 billion, or 43%, will convert in subsequent years. This portfolio had unfunded credit commitments of \$58.9 billion at December 31, 2019. The lines that enter their amortization period may experience higher delinquencies and higher loss rates than the lines in their draw period. At December 31, 2019, \$399 million, or 4%, of outstanding lines of credit that are in their amortization period were 30 or more days past due, compared with \$488 million, or 2%, for lines in their draw period. We have considered this increased inherent risk in our ACL estimate. In anticipation of our borrowers reaching the end of their contractual commitment, we have created a program to inform, educate and help these borrowers transition from interest-only to fully-amortizing payments or full repayment. We monitor the performance of the borrowers moving through the program in an effort to refine our ongoing program strategy.

Loan Purchases, Sales, and Transfers

Table 6.3 summarizes the proceeds paid or received for purchases and sales of loans and transfers from loans held for investment to mortgages/loans held for sale at lower of cost or fair value. This loan activity primarily includes loans purchased and sales of whole loan or participating interests, whereby we receive or transfer a portion of a loan. The table excludes PCI loans, loans for which we have elected the fair value option, and government insured/guaranteed real estate 1-4 family first mortgage loans because their loan activity normally does not impact the ACL.

Table 6.3: Loan Purchases, Sales, and Transfers

(in millions)	Year ended December 31,					
	2019			2018		
	Commercial	Consumer	Total	Commercial	Consumer	Total
Purchases	\$ 2,028	3,126	5,154	2,065	16	2,081
Sales	(1,797)	(530)	(2,327)	(1,905)	(261)	(2,166)
Transfers to MLHFS/LHFS	(123)	(1,889)	(2,012)	(617)	(1,995)	(2,612)

Commitments to Lend

A commitment to lend is a legally binding agreement to lend to a customer, usually at a stated interest rate, if funded, and for specific purposes and time periods. We generally require a fee to extend such commitments. Certain commitments are subject to loan agreements with covenants regarding the financial performance of the customer or borrowing base formulas on an ongoing basis that must be met before we are required to fund the commitment. We may reduce or cancel consumer commitments, including home equity lines and credit card lines, in accordance with the contracts and applicable law.

We may, as a representative for other lenders, advance funds or provide for the issuance of letters of credit under syndicated loan or letter of credit agreements. Any advances are generally repaid in less than a week and would normally require default of both the customer and another lender to expose us to loss. The unfunded amount of these temporary advance arrangements totaled approximately \$75.4 billion at December 31, 2019.

We issue commercial letters of credit to assist customers in purchasing goods or services, typically for international trade. At December 31, 2019 and 2018, we had \$862 million and \$919 million, respectively, of outstanding issued commercial letters of credit. We also originate multipurpose lending commitments under which borrowers have the option to draw on the facility for different purposes in one of several forms, including a standby letter of credit. See Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments) for additional information on standby letters of credit.

When we enter into commitments, we are exposed to credit risk. The maximum credit risk for these commitments will generally be lower than the contractual amount because a significant portion of these commitments are not funded. We manage the potential risk in commitments to lend by limiting the total amount of commitments, both by individual customer and in total, by monitoring the size and maturity structure of these commitments and by applying the same credit standards for these commitments as for all of our credit activities.

For loans and commitments to lend, we generally require collateral or a guarantee. We may require various types of collateral, including commercial and consumer real estate, automobiles, other short-term liquid assets such as accounts receivable or inventory and long-lived assets, such as equipment and other business assets. Collateral requirements for each loan or commitment may vary based on the loan product and our assessment of a customer's credit risk according to the specific credit underwriting, including credit terms and structure.

The contractual amount of our unfunded credit commitments, including unissued standby and commercial letters of credit, is summarized by portfolio segment and class of financing receivable in Table 6.4. The table excludes the issued standby and commercial letters of credit and temporary advance arrangements described above.

Table 6.4: Unfunded Credit Commitments

(in millions)	Dec 31, 2019	Dec 31, 2018
Commercial:		
Commercial and industrial	\$ 346,991	330,492
Real estate mortgage	8,206	6,984
Real estate construction	17,729	16,400
Total commercial	372,926	353,876
Consumer:		
Real estate 1-4 family first mortgage	34,391	29,736
Real estate 1-4 family junior lien mortgage	36,916	37,719
Credit card	114,933	109,840
Other revolving credit and installment	25,898	27,530
Total consumer	212,138	204,825
Total unfunded credit commitments	\$ 585,064	558,701

Note 6: Loans and Allowance for Credit Losses (continued)

Allowance for Credit Losses

Table 6.5 presents the ACL, which consists of the allowance for loan losses and the allowance for unfunded credit commitments.

Table 6.5: Allowance for Credit Losses

(in millions)	Year ended December 31,				
	2019	2018	2017	2016	2015
Balance, beginning of year	\$ 10,707	11,960	12,540	12,512	13,169
Provision for credit losses	2,687	1,744	2,528	3,770	2,442
Interest income on certain impaired loans (1)	(147)	(166)	(186)	(205)	(198)
Loan charge-offs:					
Commercial:					
Commercial and industrial	(802)	(727)	(789)	(1,419)	(734)
Real estate mortgage	(38)	(42)	(38)	(27)	(59)
Real estate construction	(1)	—	—	(1)	(4)
Lease financing	(70)	(70)	(45)	(41)	(14)
Total commercial	(911)	(839)	(872)	(1,488)	(811)
Consumer:					
Real estate 1-4 family first mortgage	(129)	(179)	(240)	(452)	(507)
Real estate 1-4 family junior lien mortgage	(118)	(179)	(279)	(495)	(635)
Credit card	(1,714)	(1,599)	(1,481)	(1,259)	(1,116)
Automobile	(647)	(947)	(1,002)	(845)	(742)
Other revolving credit and installment	(674)	(685)	(713)	(708)	(643)
Total consumer	(3,282)	(3,589)	(3,715)	(3,759)	(3,643)
Total loan charge-offs	(4,193)	(4,428)	(4,587)	(5,247)	(4,454)
Loan recoveries:					
Commercial:					
Commercial and industrial	195	304	297	263	252
Real estate mortgage	32	70	82	116	127
Real estate construction	13	13	30	38	37
Lease financing	19	23	17	11	8
Total commercial	259	410	426	428	424
Consumer:					
Real estate 1-4 family first mortgage	179	267	288	373	245
Real estate 1-4 family junior lien mortgage	184	219	266	266	259
Credit card	344	307	239	207	175
Automobile	341	363	319	325	325
Other revolving credit and installment	124	118	121	128	134
Total consumer	1,172	1,274	1,233	1,299	1,138
Total loan recoveries	1,431	1,684	1,659	1,727	1,562
Net loan charge-offs	(2,762)	(2,744)	(2,928)	(3,520)	(2,892)
Other	(29)	(87)	6	(17)	(9)
Balance, end of year	\$ 10,456	10,707	11,960	12,540	12,512
Components:					
Allowance for loan losses	\$ 9,551	9,775	11,004	11,419	11,545
Allowance for unfunded credit commitments	905	932	956	1,121	967
Allowance for credit losses	\$ 10,456	10,707	11,960	12,540	12,512
Net loan charge-offs as a percentage of average total loans	0.29%	0.29	0.31	0.37	0.33
Allowance for loan losses as a percentage of total loans	0.99	1.03	1.15	1.18	1.26
Allowance for credit losses as a percentage of total loans	1.09	1.12	1.25	1.30	1.37

(1) Certain impaired loans with an allowance calculated by discounting expected cash flows using the loan's effective interest rate over the remaining life of the loan recognize changes in allowance attributable to the passage of time as interest income.

Table 6.6 summarizes the activity in the ACL by our commercial and consumer portfolio segments.

Table 6.6: Allowance for Credit Losses Activity by Portfolio Segment

(in millions)	Year ended December 31,					
	2019			2018		
	Commercial	Consumer	Total	Commercial	Consumer	Total
Balance, beginning of year	\$ 6,417	4,290	10,707	6,632	5,328	11,960
Provision for credit losses	518	2,169	2,687	281	1,463	1,744
Interest income on certain impaired loans	(46)	(101)	(147)	(47)	(119)	(166)
Loan charge-offs	(911)	(3,282)	(4,193)	(839)	(3,589)	(4,428)
Loan recoveries	259	1,172	1,431	410	1,274	1,684
Net loan charge-offs	(652)	(2,110)	(2,762)	(429)	(2,315)	(2,744)
Other	8	(37)	(29)	(20)	(67)	(87)
Balance, end of year	\$ 6,245	4,211	10,456	6,417	4,290	10,707

Table 6.7 disaggregates our ACL and recorded investment in loans by impairment methodology.

Table 6.7: Allowance for Credit Losses by Impairment Methodology

(in millions)	Allowance for credit losses			Recorded investment in loans		
	Commercial	Consumer	Total	Commercial	Consumer	Total
December 31, 2019						
Collectively evaluated (1)	\$ 5,778	3,364	9,142	512,586	436,081	948,667
Individually evaluated (2)	467	847	1,314	3,133	9,897	13,030
PCI (3)	—	—	—	—	568	568
Total	\$ 6,245	4,211	10,456	515,719	446,546	962,265
December 31, 2018						
Collectively evaluated (1)	\$ 5,903	3,361	9,264	510,180	421,574	931,754
Individually evaluated (2)	514	929	1,443	3,221	13,126	16,347
PCI (3)	—	—	—	4	5,005	5,009
Total	\$ 6,417	4,290	10,707	513,405	439,705	953,110

- (1) Represents non-impaired loans evaluated collectively for impairment.
(2) Represents impaired loans evaluated individually for impairment.
(3) Represents the allowance for loan losses and related loan carrying value for PCI loans.

Credit Quality

We monitor credit quality by evaluating various attributes and utilize such information in our evaluation of the appropriateness of the ACL. The following sections provide the credit quality indicators we most closely monitor. The credit quality indicators are generally based on information as of our financial statement date, with the exception of updated Fair Isaac Corporation (FICO) scores and updated loan-to-value (LTV)/combined LTV (CLTV). We obtain FICO scores at loan origination and the scores are generally updated at least quarterly, except in limited circumstances, including compliance with the Fair Credit Reporting Act (FCRA). Generally, the LTV and CLTV indicators are updated in the second month of each quarter, with updates no older than September 30, 2019. See the "Purchased Credit-Impaired Loans" section in this Note for credit quality information on our PCI portfolio.

COMMERCIAL CREDIT QUALITY INDICATORS In addition to monitoring commercial loan concentration risk, we manage a consistent process for assessing commercial loan credit quality. Generally, commercial loans are subject to individual risk assessment using our internal borrower and collateral quality ratings. Our ratings are aligned to Pass and Criticized categories. The Criticized category includes Special Mention, Substandard, and Doubtful categories which are defined by bank regulatory agencies.

Table 6.8 provides a breakdown of outstanding commercial loans by risk category.

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.8: Commercial Loans by Risk Category

(in millions)	Commercial and industrial	Real estate mortgage	Real estate construction	Lease financing	Total
December 31, 2019					
By risk category:					
Pass	\$ 338,740	118,054	19,752	18,655	495,201
Criticized	15,385	3,770	187	1,176	20,518
Total commercial loans (excluding PCI)	354,125	121,824	19,939	19,831	515,719
Total commercial PCI loans (carrying value)	—	—	—	—	—
Total commercial loans	\$ 354,125	121,824	19,939	19,831	515,719
December 31, 2018					
By risk category:					
Pass	\$ 335,412	116,514	22,207	18,671	492,804
Criticized	14,783	4,500	289	1,025	20,597
Total commercial loans (excluding PCI)	350,195	121,014	22,496	19,696	513,401
Total commercial PCI loans (carrying value)	4	—	—	—	4
Total commercial loans	\$ 350,199	121,014	22,496	19,696	513,405

Table 6.9 provides past due information for commercial loans, which we monitor as part of our credit risk management practices.

Table 6.9: Commercial Loans by Delinquency Status

(in millions)	Commercial and industrial	Real estate mortgage	Real estate construction	Lease financing	Total
December 31, 2019					
By delinquency status:					
Current-29 days past due (DPD) and still accruing	\$ 352,110	120,967	19,845	19,484	512,406
30-89 DPD and still accruing	423	253	53	252	981
90+ DPD and still accruing	47	31	—	—	78
Nonaccrual loans	1,545	573	41	95	2,254
Total commercial loans (excluding PCI)	354,125	121,824	19,939	19,831	515,719
Total commercial PCI loans (carrying value)	—	—	—	—	—
Total commercial loans	\$ 354,125	121,824	19,939	19,831	515,719
December 31, 2018					
By delinquency status:					
Current-29 DPD and still accruing	\$ 348,158	120,176	22,411	19,443	510,188
30-89 DPD and still accruing	508	207	53	163	931
90+ DPD and still accruing	43	51	—	—	94
Nonaccrual loans	1,486	580	32	90	2,188
Total commercial loans (excluding PCI)	350,195	121,014	22,496	19,696	513,401
Total commercial PCI loans (carrying value)	4	—	—	—	4
Total commercial loans	\$ 350,199	121,014	22,496	19,696	513,405

CONSUMER CREDIT QUALITY INDICATORS We have various classes of consumer loans that present unique risks. Loan delinquency, FICO credit scores and LTV for loan types are common credit quality indicators that we monitor and utilize in our evaluation of the appropriateness of the ACL for the consumer portfolio segment.

Many of our loss estimation techniques used for the ACL rely on delinquency-based models; therefore, delinquency is an important indicator of credit quality and the establishment of our ACL. Table 6.10 provides the outstanding balances of our consumer portfolio by delinquency status.

Table 6.10: Consumer Loans by Delinquency Status

(in millions)	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Credit card	Automobile	Other revolving credit and installment	Total
December 31, 2019						
By delinquency status:						
Current-29 DPD	\$ 279,722	28,870	39,935	46,650	33,981	429,158
30-59 DPD	1,136	216	311	882	140	2,685
60-89 DPD	404	115	221	263	81	1,084
90-119 DPD	197	69	202	77	74	619
120-179 DPD	160	71	343	1	18	593
180+ DPD	503	155	1	—	10	669
Government insured/guaranteed loans (1)	10,999	—	—	—	—	10,999
Loans held at fair value	171	—	—	—	—	171
Total consumer loans (excluding PCI)	293,292	29,496	41,013	47,873	34,304	445,978
Total consumer PCI loans (carrying value) (2)	555	13	—	—	—	568
Total consumer loans	\$ 293,847	29,509	41,013	47,873	34,304	446,546
December 31, 2018						
By delinquency status:						
Current-29 DPD	\$ 263,881	33,644	38,008	43,604	35,794	414,931
30-59 DPD	1,411	247	292	1,040	140	3,130
60-89 DPD	549	126	212	314	87	1,288
90-119 DPD	257	74	192	109	80	712
120-179 DPD	225	77	320	2	27	651
180+ DPD	822	213	1	—	20	1,056
Government insured/guaranteed loans (1)	12,688	—	—	—	—	12,688
Loans held at fair value	244	—	—	—	—	244
Total consumer loans (excluding PCI)	280,077	34,381	39,025	45,069	36,148	434,700
Total consumer PCI loans (carrying value) (2)	4,988	17	—	—	—	5,005
Total consumer loans	\$ 285,065	34,398	39,025	45,069	36,148	439,705

(1) Represents loans whose repayments are predominantly insured by the Federal Housing Administration (FHA) or guaranteed by the Department of Veterans Affairs (VA). Loans insured/guaranteed by the FHA/VA and 90+ DPD totaled \$6.4 billion at December 31, 2019, compared with \$7.7 billion at December 31, 2018.

(2) 26% of the adjusted unpaid principal balance for consumer PCI loans are 30+ DPD at December 31, 2019, compared with 18% at December 31, 2018.

Of the \$1.9 billion of consumer loans not government insured/guaranteed that are 90 days or more past due at December 31, 2019, \$855 million was accruing, compared with \$2.4 billion past due and \$885 million accruing at December 31, 2018.

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.11 provides a breakdown of our consumer portfolio by FICO. Substantially all of the scored consumer portfolio has an updated FICO of 680 and above, reflecting a strong current borrower credit profile. FICO is not available for certain loan types, or may not be required if we deem it unnecessary due to

strong collateral and other borrower attributes. Substantially all loans not requiring a FICO score are securities-based loans originated through retail brokerage, and totaled \$9.1 billion at December 31, 2019, and \$8.9 billion at December 31, 2018.

Table 6.11: Consumer Loans by FICO

(in millions)	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Credit card	Automobile	Other revolving credit and installment	Total
December 31, 2019						
By FICO:						
< 600	\$ 3,264	1,164	3,373	6,041	704	14,546
600-639	2,392	782	2,853	4,230	670	10,927
640-679	5,068	1,499	6,626	6,324	1,730	21,247
680-719	12,844	3,192	9,732	7,871	3,212	36,851
720-759	27,879	4,407	8,376	7,839	4,097	52,598
760-799	61,559	5,483	5,648	7,624	4,915	85,229
800+	165,460	11,851	4,037	7,900	7,585	196,833
No FICO available	3,656	1,118	368	44	2,316	7,502
FICO not required	—	—	—	—	9,075	9,075
Government insured/guaranteed loans (1)	11,170	—	—	—	—	11,170
Total consumer loans (excluding PCI)	293,292	29,496	41,013	47,873	34,304	445,978
Total consumer PCI loans (carrying value) (2)	555	13	—	—	—	568
Total consumer loans	\$ 293,847	29,509	41,013	47,873	34,304	446,546
December 31, 2018						
By FICO:						
< 600	\$ 4,273	1,454	3,292	7,071	697	16,787
600-639	2,974	994	2,777	4,431	725	11,901
640-679	5,810	1,898	6,464	6,225	1,822	22,219
680-719	13,568	3,908	9,445	7,354	3,384	37,659
720-759	27,258	5,323	7,949	6,853	4,395	51,778
760-799	57,193	6,315	5,227	5,947	5,322	80,004
800+	151,465	13,190	3,794	7,099	8,411	183,959
No FICO available	4,604	1,299	77	89	2,507	8,576
FICO not required	—	—	—	—	8,885	8,885
Government insured/guaranteed loans (1)	12,932	—	—	—	—	12,932
Total consumer loans (excluding PCI)	280,077	34,381	39,025	45,069	36,148	434,700
Total consumer PCI loans (carrying value) (2)	4,988	17	—	—	—	5,005
Total consumer loans	\$ 285,065	34,398	39,025	45,069	36,148	439,705

(1) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

(2) 41% of the adjusted unpaid principal balance for consumer PCI loans have FICO scores less than 680 and 19% where no FICO is available to us at December 31, 2019, compared with 45% and 15%, respectively, at December 31, 2018.

LTV refers to the ratio comparing the loan's unpaid principal balance to the property's collateral value. CLTV refers to the combination of first mortgage and junior lien mortgage (including unused line amounts for credit line products) ratios. LTVs and CLTVs are updated quarterly using a cascade approach which first uses values provided by automated valuation models (AVMs) for the property. If an AVM is not available, then the value is estimated using the original appraised value adjusted by the change in Home Price Index (HPI) for the property location. If an HPI is not available, the original appraised value is used. The HPI value is normally the only method considered for high value properties, generally with an original value of \$1 million or more, as the AVM values have proven less accurate for these properties.

Table 6.12 shows the most updated LTV and CLTV distribution of the real estate 1-4 family mortgage loan portfolios. We consider the trends in residential real estate markets as we monitor credit risk and establish our ACL. In the event of a default, any loss should be limited to the portion of the loan amount in excess of the net realizable value of the underlying real estate collateral value. Certain loans do not have an LTV or CLTV due to industry data availability and portfolios acquired from or serviced by other institutions.

Table 6.12: Consumer Loans by LTV/CLTV

(in millions)	December 31, 2019			December 31, 2018		
	Real estate 1-4 family first mortgage by LTV	Real estate 1-4 family junior lien mortgage by CLTV	Total	Real estate 1-4 family first mortgage by LTV	Real estate 1-4 family junior lien mortgage by CLTV	Total
By LTV/CLTV:						
0-60%	\$ 151,478	14,603	166,081	147,666	15,753	163,419
60.01-80%	114,795	9,663	124,458	104,477	11,183	115,660
80.01-100%	13,867	3,574	17,441	12,372	4,874	17,246
100.01-120% (1)	860	978	1,838	1,211	1,596	2,807
> 120% (1)	338	336	674	484	578	1,062
No LTV/CLTV available	784	342	1,126	935	397	1,332
Government insured/guaranteed loans (2)	11,170	—	11,170	12,932	—	12,932
Total consumer loans (excluding PCI)	293,292	29,496	322,788	280,077	34,381	314,458
Total consumer PCI loans (carrying value) (3)	555	13	568	4,988	17	5,005
Total consumer loans	\$ 293,847	29,509	323,356	285,065	34,398	319,463

(1) Reflects total loan balances with LTV/CLTV amounts in excess of 100%. In the event of default, the loss content would generally be limited to only the amount in excess of 100% LTV/CLTV.

(2) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

(3) 9% of the adjusted unpaid principal balance for consumer PCI loans have LTV/CLTV amounts greater than 80% at December 31, 2019, compared with 10% at December 31, 2018.

NONACCRUAL LOANS Table 6.13 provides loans on nonaccrual status. PCI loans are excluded from this table because they continue to earn interest from accretable yield, independent of performance in accordance with their contractual terms.

Table 6.13: Nonaccrual Loans

(in millions)	Dec 31, 2019	Dec 31, 2018
Commercial:		
Commercial and industrial	\$ 1,545	1,486
Real estate mortgage	573	580
Real estate construction	41	32
Lease financing	95	90
Total commercial	2,254	2,188
Consumer:		
Real estate 1-4 family first mortgage	2,150	3,183
Real estate 1-4 family junior lien mortgage	796	945
Automobile	106	130
Other revolving credit and installment	40	50
Total consumer	3,092	4,308
Total nonaccrual loans (excluding PCI)	\$ 5,346	6,496

LOANS IN PROCESS OF FORECLOSURE Our recorded investment in consumer mortgage loans collateralized by residential real estate property that are in process of foreclosure was \$3.5 billion and \$4.6 billion at December 31, 2019 and 2018, respectively, which included \$2.8 billion and \$3.2 billion, respectively, of loans that are government insured/guaranteed. Under the Consumer Financial Protection Bureau guidelines, we do not commence the foreclosure process on real estate 1-4 family mortgage loans until after the loan is 120 days delinquent. Foreclosure procedures and timelines vary depending on whether the property address resides in a judicial or non-judicial state. Judicial states require the foreclosure to be processed through the state's courts while non-judicial states are processed without court intervention. Foreclosure timelines vary according to state law.

Note 6: Loans and Allowance for Credit Losses (continued)

LOANS 90 DAYS OR MORE PAST DUE AND STILL ACCRUING Certain loans 90 days or more past due are still accruing, because they are (1) well-secured and in the process of collection or (2) real estate 1-4 family mortgage loans or consumer loans exempt under regulatory rules from being classified as nonaccrual until later delinquency, usually 120 days past due. PCI loans of \$102 million at December 31, 2019, and \$370 million at December 31, 2018, are not included in these past due and still accruing loans even when they are 90 days or more contractually past due. PCI loans are considered to be accruing because they continue to earn interest from accretable yield, independent of performance in accordance with their contractual terms.

Table 6.14 shows non-PCI loans 90 days or more past due and still accruing by class for loans not government insured/guaranteed.

Table 6.14: Loans 90 Days or More Past Due and Still Accruing

(in millions)	Dec 31, 2019	Dec 31, 2018
Total (excluding PCI):	\$ 7,285	8,704
Less: FHA insured/VA guaranteed (1)	6,352	7,725
Total, not government insured/ guaranteed	\$ 933	979
By segment and class, not government insured/ guaranteed:		
Commercial:		
Commercial and industrial	\$ 47	43
Real estate mortgage	31	51
Total commercial	78	94
Consumer:		
Real estate 1-4 family first mortgage	112	124
Real estate 1-4 family junior lien mortgage	32	32
Credit card	546	513
Automobile	78	114
Other revolving credit and installment	87	102
Total consumer	855	885
Total, not government insured/ guaranteed	\$ 933	979

(1) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

IMPAIRED LOANS Table 6.15 summarizes key information for impaired loans. Our impaired loans predominantly include loans on nonaccrual status in the commercial portfolio segment and loans modified in a TDR, whether on accrual or nonaccrual status. Impaired loans generally have estimated losses which are included in the ACL. We do have impaired loans with no ACL when the loss content has been previously recognized through charge-offs, such as collateral dependent loans, or when loans

are currently performing in accordance with their terms and no loss has been estimated. Impaired loans exclude PCI loans and loans that have been fully charged off or otherwise have zero recorded investment. Table 6.15 includes trial modifications that totaled \$115 million at December 31, 2019, and \$149 million at December 31, 2018.

For additional information on our impaired loans and ACL, see Note 1 (Summary of Significant Accounting Policies).

Table 6.15: Impaired Loans Summary

(in millions)	Unpaid principal balance	Recorded investment		
		Impaired loans	Impaired loans with related allowance for credit losses	Related allowance for credit losses
December 31, 2019				
Commercial:				
Commercial and industrial	\$ 2,792	2,003	1,903	311
Real estate mortgage	1,137	974	803	110
Real estate construction	81	51	41	11
Lease financing	131	105	105	35
Total commercial	4,141	3,133	2,852	467
Consumer:				
Real estate 1-4 family first mortgage (1)	8,107	7,674	4,433	437
Real estate 1-4 family junior lien mortgage	1,586	1,451	925	144
Credit card	520	520	520	209
Automobile	138	81	42	8
Other revolving credit and installment	178	171	155	49
Total consumer (2)	10,529	9,897	6,075	847
Total impaired loans (excluding PCI)	\$ 14,670	13,030	8,927	1,314
December 31, 2018				
Commercial:				
Commercial and industrial	\$ 3,057	2,030	1,730	319
Real estate mortgage	1,228	1,032	1,009	154
Real estate construction	74	47	46	9
Lease financing	146	112	112	32
Total commercial	4,505	3,221	2,897	514
Consumer:				
Real estate 1-4 family first mortgage	12,309	10,738	4,420	525
Real estate 1-4 family junior lien mortgage	1,886	1,694	1,133	183
Credit card	449	449	449	172
Automobile	153	89	43	8
Other revolving credit and installment	162	156	136	41
Total consumer (2)	14,959	13,126	6,181	929
Total impaired loans (excluding PCI)	\$ 19,464	16,347	9,078	1,443

(1) Impaired loans includes reduction of \$1.7 billion reclassified to MLHFS during 2019.

(2) Includes the recorded investment of \$1.2 billion and \$1.3 billion at December 31, 2019 and 2018, respectively, of government insured/guaranteed loans that are predominantly insured by the FHA or guaranteed by the VA and generally do not have an ACL. Impaired loans may also have limited, if any, ACL when the recorded investment of the loan approximates estimated net realizable value as a result of charge-offs prior to a TDR modification.

Note 6: Loans and Allowance for Credit Losses (continued)

Commitments to lend additional funds on loans whose terms have been modified in a TDR amounted to \$500 million and \$513 million at December 31, 2019 and 2018, respectively.

Table 6.16 provides the average recorded investment in impaired loans and the amount of interest income recognized on impaired loans by portfolio segment and class.

Table 6.16: Average Recorded Investment in Impaired Loans

(in millions)	Year ended December 31,					
	2019		2018		2017	
	Average recorded investment	Recognized interest income	Average recorded investment	Recognized interest income	Average recorded investment	Recognized interest income
Commercial:						
Commercial and industrial	\$ 2,150	129	2,287	173	3,241	118
Real estate mortgage	1,067	59	1,193	89	1,328	91
Real estate construction	52	6	60	7	66	14
Lease financing	93	1	125	1	105	1
Total commercial	3,362	195	3,665	270	4,740	224
Consumer:						
Real estate 1-4 family first mortgage	9,031	506	11,522	664	13,326	730
Real estate 1-4 family junior lien mortgage	1,586	99	1,804	116	2,041	121
Credit card	488	64	407	50	323	36
Automobile	84	12	86	11	86	11
Other revolving credit and installment	162	13	142	10	117	8
Total consumer	11,351	694	13,961	851	15,893	906
Total impaired loans (excluding PCI)	\$ 14,713	889	17,626	1,121	20,633	1,130
Interest income:						
Cash basis of accounting	\$	241		338		299
Other (1)		648		783		831
Total interest income	\$	889		1,121		1,130

(1) Includes interest recognized on accruing TDRs, interest recognized related to certain impaired loans which have an ACL calculated using discounting, and amortization of purchase accounting adjustments related to certain impaired loans.

TROUBLED DEBT RESTRUCTURINGS (TDRs) When, for economic or legal reasons related to a borrower's financial difficulties, we grant a concession for other than an insignificant period of time to a borrower that we would not otherwise consider, the related loan is classified as a TDR, the balance of which totaled \$11.8 billion and \$15.5 billion at December 31, 2019 and 2018, respectively. The majority of the decline in consumer TDRs was due to a reclassification of \$1.7 billion in real estate 1-4 family first mortgage TDR loans to MLHFS. We do not consider loan resolutions such as foreclosure or short sale to be a TDR.

We may require some consumer borrowers experiencing financial difficulty to make trial payments generally for a period of three to four months, according to the terms of a planned permanent modification, to determine if they can perform according to those terms. These arrangements represent trial modifications, which we classify and account for as TDRs. While loans are in trial payment programs, their original terms are not considered modified and they continue to advance through delinquency status and accrue interest according to their original terms.

Table 6.17 summarizes our TDR modifications for the periods presented by primary modification type and includes the financial effects of these modifications. For those loans that modify more than once, the table reflects each modification that occurred during the period. Loans that both modify and are paid off or written-off within the period, as well as changes in recorded investment during the period for loans modified in prior periods, are not included in the table.

Table 6.17: TDR Modifications

(in millions)	Primary modification type (1)				Financial effects of modifications		
	Principal (2)	Interest rate reduction	Other concessions (3)	Total	Charge-offs (4)	Weighted average interest rate reduction	Recorded investment related to interest rate reduction (5)
Year ended December 31, 2019							
Commercial:							
Commercial and industrial	\$ 13	90	1,286	1,389	104	0.40%	\$ 90
Real estate mortgage	—	38	417	455	—	0.69	38
Real estate construction	13	1	32	46	—	1.00	1
Lease financing	—	—	2	2	—	—	—
Total commercial	26	129	1,737	1,892	104	0.49	129
Consumer:							
Real estate 1-4 family first mortgage	110	13	868	991	2	2.04	68
Real estate 1-4 family junior lien mortgage	5	37	82	124	3	2.35	39
Credit card	—	376	—	376	—	12.91	376
Automobile	8	9	51	68	29	4.86	9
Other revolving credit and installment	1	51	7	59	—	8.07	52
Trial modifications (6)	—	—	13	13	—	—	—
Total consumer	124	486	1,021	1,631	34	10.19	544
Total	\$ 150	615	2,758	3,523	138	8.33%	\$ 673
Year ended December 31, 2018							
Commercial:							
Commercial and industrial	\$ 13	29	2,310	2,352	58	1.18%	\$ 29
Real estate mortgage	—	44	375	419	—	0.88	44
Real estate construction	—	—	25	25	—	—	—
Lease financing	—	—	63	63	—	—	—
Total commercial	13	73	2,773	2,859	58	1.00	73
Consumer:							
Real estate 1-4 family first mortgage	209	26	1,042	1,277	4	2.25	119
Real estate 1-4 family junior lien mortgage	7	41	113	161	5	2.14	45
Credit card	—	336	—	336	—	12.54	336
Automobile	13	16	55	84	30	6.21	16
Other revolving credit and installment	—	49	12	61	—	7.95	49
Trial modifications (6)	—	—	8	8	—	—	—
Total consumer	229	468	1,230	1,927	39	8.96	565
Total	\$ 242	541	4,003	4,786	97	8.06%	\$ 638
Year ended December 31, 2017							
Commercial:							
Commercial and industrial	\$ 24	45	2,912	2,981	173	0.64%	\$ 45
Real estate mortgage	5	59	507	571	20	1.28	59
Real estate construction	—	1	26	27	—	0.69	1
Lease financing	—	—	37	37	—	—	—
Total commercial	29	105	3,482	3,616	193	1.00	105
Consumer:							
Real estate 1-4 family first mortgage	231	140	1,035	1,406	15	2.57	257
Real estate 1-4 family junior lien mortgage	25	82	81	188	14	3.26	93
Credit card	—	257	—	257	—	11.98	257
Automobile	2	15	67	84	39	5.89	15
Other revolving credit and installment	—	47	8	55	1	7.47	47
Trial modifications (6)	—	—	(28)	(28)	—	—	—
Total consumer	258	541	1,163	1,962	69	6.70	669
Total	\$ 287	646	4,645	5,578	262	5.92%	\$ 774

- Amounts represent the recorded investment in loans after recognizing the effects of the TDR, if any. TDRs may have multiple types of concessions, but are presented only once in the first modification type based on the order presented in the table above. The reported amounts include loans remodified of \$1.1 billion, \$1.9 billion and \$2.1 billion, for the years ended December 31, 2019, 2018 and 2017, respectively.
- Principal modifications include principal forgiveness at the time of the modification, contingent principal forgiveness granted over the life of the loan based on borrower performance, and principal that has been legally separated and deferred to the end of the loan, with a zero percent contractual interest rate.
- Other concessions include loans discharged in bankruptcy, loan renewals, term extensions and other interest and noninterest adjustments, but exclude modifications that also forgive principal and/or reduce the contractual interest rate.
- Charge-offs include write-downs of the investment in the loan in the period it is contractually modified. The amount of charge-off will differ from the modification terms if the loan has been charged down prior to the modification based on our policies. In addition, there may be cases where we have a charge-off/down with no legal principal modification. Modifications resulted in deferring or legally forgiving principal (actual or contingent) of \$24 million, \$28 million and \$32 million for the years ended December 31, 2019, 2018 and 2017, respectively.
- Recorded investment related to interest rate reduction reflects the effect of reduced interest rates on loans with an interest rate concession as one of their concession types, which includes loans reported as a principal primary modification type that also have an interest rate concession.
- Trial modifications are granted a delay in payments due under the original terms during the trial payment period. However, these loans continue to advance through delinquency status and accrue interest according to their original terms. Any subsequent permanent modification generally includes interest rate related concessions; however, the exact concession type and resulting financial effect are usually not known until the loan is permanently modified. Trial modifications for the period are presented net of previously reported trial modifications that became permanent in the current period.

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.18 summarizes permanent modification TDRs that have defaulted in the current period within 12 months of their permanent modification date. We are reporting these defaulted

TDRs based on a payment default definition of 90 days past due for the commercial portfolio segment and 60 days past due for the consumer portfolio segment.

Table 6.18: Defaulted TDRs

(in millions)	Recorded investment of defaults		
	Year ended December 31,		
	2019	2018	2017
Commercial:			
Commercial and industrial	\$ 111	198	173
Real estate mortgage	48	76	61
Real estate construction	17	36	4
Lease financing	—	—	1
Total commercial	176	310	239
Consumer:			
Real estate 1-4 family first mortgage	41	60	114
Real estate 1-4 family junior lien mortgage	13	14	19
Credit card	88	79	74
Automobile	12	14	15
Other revolving credit and installment	8	6	5
Total consumer	162	173	227
Total	\$ 338	483	466

Purchased Credit-Impaired Loans

Table 6.19 presents PCI loans net of any remaining purchase accounting adjustments. Total consumer loans are predominantly Pick-a-Pay loans (real estate 1-4 family mortgage).

Table 6.19: PCI Loans

(in millions)	Dec 31, 2019	Dec 31, 2018
Total commercial	\$ —	4
Total consumer	568	5,005
Total PCI loans (carrying value)	\$ 568	5,009
Total PCI loans (unpaid principal balance)	\$ 990	7,348

For the years ended December 31, 2019 and 2018, we sold \$4.0 billion and \$6.2 billion of PCI loans, respectively, that resulted in gains within other noninterest income of \$1.6 billion and \$2.4 billion, respectively.

Note 7: Leasing Activity

The information below provides a summary of our leasing activities as a lessor and lessee.

As a Lessor

Table 7.1 presents the composition of our leasing revenue and Table 7.2 provides the components of our investment in lease financing.

Table 7.1: Leasing Revenue

(in millions)	Year ended December 31, 2019
Interest income on lease financing	\$ 869
Other lease revenues:	
Variable revenues on lease financing	96
Fixed revenues on operating leases	1,393
Variable revenues on operating leases	66
Other lease-related revenues (1)	57
Lease income	1,612
Total leasing revenue	\$ 2,481

(1) Predominantly includes net gains on disposition of assets leased under operating leases or lease financings.

Table 7.2: Investment in Lease Financing

(in millions)	Dec 31, 2019
Lease receivables	\$ 18,114
Residual asset values	4,208
Unearned income	(2,491)
Lease financing	\$ 19,831

Our net investment in financing and sales-type leases includes \$1.9 billion of leveraged leases at December 31, 2019.

As shown in Table 9.2, included in Note 9 (Premises, Equipment and Other Assets), we had \$8.2 billion in operating lease assets at December 31, 2019, which was net of \$3.1 billion of accumulated depreciation. Depreciation expense for the operating lease assets was \$848 million in 2019.

Table 7.3 presents future lease payments owed by our lessees.

Table 7.3: Maturities of Lease Receivables

	December 31, 2019	
(in millions)	Direct financing and sales-type leases	Operating leases
2020	\$ 5,953	883
2021	4,997	614
2022	2,951	434
2023	1,634	298
2024	862	199
Thereafter	1,717	447
Total lease receivables	\$ 18,114	2,875

As a Lessee

Substantially all of our leases are operating leases. Table 7.4 presents balances for our operating leases.

Table 7.4: Operating Lease Right of Use (ROU) Assets and Lease Liabilities

(in millions)	Dec 31, 2019
ROU assets	\$ 4,724
Lease liabilities	5,297

Table 7.5 provides the composition of our lease costs, which are predominantly included in net occupancy expense.

Table 7.5: Lease Costs

(in millions)	Year ended December 31, 2019
Fixed lease expense - operating leases	\$ 1,212
Variable lease expense	314
Other (1)	(68)
Total lease costs	\$ 1,458

(1) Predominantly includes gains recognized from sale leaseback transactions and sublease rental income.

Net operating lease rental expense was \$1.3 billion for the years 2018 and 2017 and is predominantly included in net occupancy expense.

Note 7: Leasing Activity (continued)

Tables Table 7.6 and 7.7 provide the future lease payments under operating leases as of December 31, 2018, and December 31, 2019, respectively. Table 7.7 also includes information on the remaining average lease term and discount rate.

Table 7.6: Lease Payments on Operating Leases Prior to Adoption of ASU 2016-02 – Leases

(in millions)	December 31, 2018	
2019	\$	1,174
2020		1,056
2021		880
2022		713
2023		577
Thereafter		1,654
Total lease payments	\$	6,054

Table 7.7: Lease Payments on Operating Leases Subsequent to Adoption of ASU 2016-02 – Leases

(in millions, except for weighted averages)	December 31, 2019	
2020	\$	1,006
2021		1,045
2022		897
2023		750
2024		597
Thereafter		1,672
Total lease payments		5,967
Less: imputed interest		670
Total operating lease liabilities	\$	5,297
Weighted average remaining lease term (in years)		7.1
Weighted average discount rate		3.1%

Our operating leases predominantly expire within the next 15 years, with the longest lease expiring in 2105. We do not include renewal or termination options in the establishment of the lease term when we are not reasonably certain that we will exercise them. As of December 31, 2019, we had additional operating leases commitments of \$159 million, predominantly for real estate, which leases had not yet commenced. These leases are expected to commence during 2020 and have lease terms of 2 years to 17 years.

Note 8: Equity Securities

Table 8.1 provides a summary of our equity securities by business purpose and accounting method, including equity securities with readily determinable fair values (marketable) and those without readily determinable fair values (nonmarketable).

Table 8.1: Equity Securities

(in millions)	Dec 31, 2019	Dec 31, 2018
Held for trading at fair value:		
Marketable equity securities	\$ 27,440	19,449
Not held for trading:		
Fair value:		
Marketable equity securities (1)	6,481	4,513
Nonmarketable equity securities	8,015	5,594
Total equity securities at fair value	14,496	10,107
Equity method:		
Low-income housing tax credit investments	11,343	10,999
Private equity	3,459	3,832
Tax-advantaged renewable energy	3,811	3,073
New market tax credit and other	387	311
Total equity method	19,000	18,215
Other:		
Federal Reserve Bank stock and other at cost (2)	4,790	5,643
Private equity (3)	2,515	1,734
Total equity securities not held for trading	40,801	35,699
Total equity securities	\$ 68,241	55,148

- (1) Includes \$3.8 billion and \$3.2 billion at December 31, 2019 and 2018, respectively, related to securities held as economic hedges of our deferred compensation plan obligations.
(2) Includes \$4.8 billion and \$5.6 billion at December 31, 2019 and 2018, respectively, related to investments in Federal Reserve Bank and Federal Home Loan Bank stock.
(3) Represents nonmarketable equity securities accounted for under the measurement alternative.

Equity Securities Held for Trading

Equity securities held for trading purposes are marketable equity securities traded on organized exchanges. These securities are held as part of our customer accommodation trading activities. For more information on these activities, see Note 4 (Trading Activities).

Equity Securities Not Held for Trading

We also hold equity securities unrelated to trading activities. These securities include private equity and tax credit investments, securities held as economic hedges or to meet regulatory requirements (for example, Federal Reserve Bank and Federal Home Loan Bank stock).

FAIR VALUE Marketable equity securities held for purposes other than trading primarily consist of exchange-traded equity funds held to economically hedge obligations related to our deferred compensation plans and, to a lesser extent, other holdings of publicly traded equity securities held for investment purposes. We account for certain nonmarketable equity securities under the fair value method, and substantially all of these securities are economically hedged with equity derivatives.

EQUITY METHOD Our equity method investments consist of tax credit and private equity investments, the majority of which are our low-income housing tax credit (LIHTC) investments.

We invest in affordable housing projects that qualify for the LIHTC, which are designed to promote private development of low-income housing. These investments generate a return mostly through realization of federal tax credit and other tax benefits. We recognized pre-tax losses of \$1.3 billion for 2019 and \$1.2 billion for both 2018 and 2017, related to our LIHTC investments. These losses were recognized in other noninterest income. We also recognized total tax benefits of \$1.5 billion for 2019, 2018 and 2017, which included tax credits recorded to income taxes of \$1.2 billion for 2019 and 2018, and \$1.1 billion for 2017. We are periodically required to provide additional financial support during the investment period. A liability is recognized for unfunded commitments that are both legally binding and probable of funding. These commitments are predominantly funded within three years of initial investment. Our liability for unfunded commitments was \$4.3 billion and \$3.9 billion at December 31, 2019 and 2018, respectively. This liability for unfunded commitments is included in long-term debt.

OTHER The remaining portion of our nonmarketable equity securities portfolio consists of securities accounted for using the cost or measurement alternative method.

Note 8: Equity Securities (continued)

Realized Gains and Losses Not Held for Trading

Table 8.2 provides a summary of the net gains and losses for equity securities not held for trading. Gains and losses for securities held for trading are reported in net gains from trading activities.

Table 8.2: Net Gains (Losses) from Equity Securities Not Held for Trading

(in millions)	Year ended December 31,		
	2019	2018	2017
Net gains (losses) from equity securities carried at fair value:			
Marketable equity securities	\$ 1,067	(389)	967
Nonmarketable equity securities	2,413	709	1,557
Total equity securities carried at fair value	3,480	320	2,524
Net gains (losses) from nonmarketable equity securities not carried at fair value:			
Impairment write-downs	(245)	(352)	(339)
Net unrealized gains related to measurement alternative observable transactions	567	418	—
Net realized gains on sale	1,161	1,504	980
All other	—	33	97
Total nonmarketable equity securities not carried at fair value	1,483	1,603	738
Net losses from economic hedge derivatives (1)	(2,120)	(408)	(1,483)
Total net gains from equity securities not held for trading	\$ 2,843	1,515	1,779

(1) Includes net gains (losses) on derivatives not designated as hedging instruments.

Measurement Alternative

Table 8.3 provides additional information about the impairment write-downs and observable price adjustments related to

nonmarketable equity securities accounted for under the measurement alternative. Gains and losses related to these adjustments are also included in Table 8.2.

Table 8.3: Net Gains (Losses) from Measurement Alternative Equity Securities

(in millions)	Year ended December 31,	
	2019	2018
Net gains (losses) recognized in earnings during the period:		
Gross unrealized gains due to observable price changes	\$ 584	443
Gross unrealized losses due to observable price changes	(17)	(25)
Impairment write-downs	(116)	(33)
Realized net gains from sale	163	274
Total net gains recognized during the period	\$ 614	659

Table 8.4 presents cumulative carrying value adjustments to nonmarketable equity securities accounted for under the measurement alternative that were still held as of December 31, 2019 and 2018.

Table 8.4: Measurement Alternative Cumulative Gains (Losses)

(in millions)	Year ended December 31,	
	2019	2018
Cumulative gains (losses):		
Gross unrealized gains due to observable price changes	\$ 973	415
Gross unrealized losses due to observable price changes	(42)	(25)
Impairment write-downs	(134)	(33)

Note 9: Premises, Equipment and Other Assets

Table 9.1: Premises and Equipment

(in millions)	Dec 31, 2019	Dec 31, 2018
Land	\$ 1,857	1,757
Buildings	9,499	8,974
Furniture and equipment	7,189	6,896
Leasehold improvements	2,597	2,387
Finance lease ROU assets	33	75
Total premises and equipment	21,175	20,089
Less: Accumulated depreciation and amortization	11,866	11,169
Net book value, premises and equipment	\$ 9,309	8,920

Depreciation and amortization expense for premises and equipment was \$1.4 billion, \$1.3 billion and \$1.2 billion in 2019, 2018 and 2017, respectively.

Dispositions of premises and equipment resulted in net gains of \$82 million, \$32 million and \$128 million in 2019, 2018 and 2017, respectively, included in other noninterest expense.

Table 9.2 presents the components of other assets.

Table 9.2: Other Assets

(in millions)	Dec 31, 2019	Dec 31, 2018
Corporate/bank-owned life insurance	\$ 20,070	19,751
Accounts receivable (1)	29,137	34,281
Interest receivable	5,586	6,084
Customer relationship and other amortized intangibles	423	545
Foreclosed assets:		
Residential real estate:		
Government insured/guaranteed (1)	50	88
Non-government insured/guaranteed	172	229
Other	81	134
Operating lease assets (lessor)	8,221	9,036
Operating lease ROU assets (lessee) (2)	4,724	—
Due from customers on acceptances	253	258
Other	10,200	9,444
Total other assets	\$ 78,917	79,850

- (1) Certain government-guaranteed residential real estate mortgage loans upon foreclosure are included in Accounts receivable. For more information, see Note 1 (Summary of Significant Accounting Policies).
- (2) We recognized operating lease right of use (ROU) assets effective January 1, 2019, in connection with the adoption of ASU 2016-02 – Leases. For more information, see Note 1 (Summary of Significant Accounting Policies).

Note 10: Securitizations and Variable Interest Entities

Involvement with Special Purpose Entities (SPEs)

In the normal course of business, we enter into various types of on- and off-balance sheet transactions with SPEs, which are corporations, trusts, limited liability companies or partnerships that are established for a limited purpose. SPEs are often formed in connection with securitization transactions in which assets are transferred to an SPE. The SPE may alter the risk profile of the asset by entering into derivative transactions or obtaining credit support, and issues various forms of interests in those assets to investors. In a securitization transaction where we transferred assets from our balance sheet, we typically receive cash and sometimes other interests in an SPE as proceeds for the assets we transfer. In certain transactions we may retain the right to service the transferred receivables and to repurchase those receivables from the SPE if the outstanding balance of the receivables falls to a level where the cost exceeds the benefits of servicing such receivables. In addition, we may purchase the right to service loans in an SPE that were transferred to the SPE by a third party.

In connection with our securitization activities, we have various forms of ongoing involvement with SPEs, which may include:

- underwriting securities issued by SPEs and subsequently making markets in those securities;
- providing liquidity facilities to support short-term obligations of SPEs issued to third-party investors;
- providing credit enhancement on securities issued by SPEs or market value guarantees of assets held by SPEs through the use of letters of credit, financial guarantees, credit default swaps and total return swaps;
- entering into other derivative contracts with SPEs;
- holding senior or subordinated interests in SPEs;
- acting as servicer or investment manager for SPEs; and
- providing administrative or trustee services to SPEs.

SPEs formed in connection with securitization transactions are generally considered variable interest entities (VIEs). SPEs formed for other corporate purposes may be VIEs as well. A VIE is an entity whose total equity is insufficient to finance its activities without additional subordinated financial support, or whose equity investors lack the ability to control the entity's activities or lack the ability to receive expected benefits or absorb obligations in a manner consistent with their investment in the entity. A VIE is consolidated by its primary beneficiary which is the party that has both the power to direct the activities that most significantly impact the VIE and a variable interest that could potentially be significant to the VIE. A variable interest is a contractual, ownership or other interest whose value changes with changes in the fair value of the VIE's net assets. To determine whether or not a variable interest we hold could potentially be significant to the VIE, we consider both qualitative and quantitative factors regarding the nature, size and form of our involvement with the VIE. We assess whether or not we are the primary beneficiary of a VIE on an on-going basis.

Secured borrowings are transactions involving transfers of our financial assets to unconsolidated third parties that are accounted for as financings with the assets pledged as collateral. Accordingly, the transferred assets remain recognized on our balance sheet. See also Repurchase and Securities Lending Agreements in Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments) for additional transactions accounted for as secured borrowings.

Table 10.1 provides the classifications of assets and liabilities in our balance sheet for our transactions with VIEs.

Table 10.1: Balance Sheet Transactions with VIEs

(in millions)	VIEs that we do not consolidate	VIEs that we consolidate (2)	Transfers that we account for as secured borrowings (2)	Total
December 31, 2019				
Cash and due from banks	\$ —	16	—	16
Interest-earning deposits with banks	—	284	—	284
Debt securities (1):				
Trading debt securities	792	339	—	1,131
Available-for-sale debt securities	1,696	201	—	1,897
Held-to-maturity debt securities	791	—	—	791
Loans	2,127	13,170	80	15,377
Mortgage servicing rights	11,884	—	—	11,884
Derivative assets	142	1	—	143
Equity securities	11,401	118	—	11,519
Other assets	1,268	239	—	1,507
Total assets	30,101	14,368	80	44,549
Short-term borrowings	—	401	—	401
Derivative liabilities	1	3	—	4
Accrued expenses and other liabilities	189	235	—	424
Long-term debt	4,817	587	79	5,483
Total liabilities	5,007	1,226	79	6,312
Noncontrolling interests	—	43	—	43
Net assets	\$ 25,094	13,099	1	38,194
December 31, 2018				
Cash and due from banks	\$ —	139	—	139
Interest-earning deposits with banks	—	8	—	8
Debt securities (1):				
Trading debt securities	2,110	245	—	2,355
Available-for-sale debt securities	2,686	317	—	3,003
Held-to-maturity debt securities	510	—	—	510
Loans	2,657	13,564	94	16,315
Mortgage servicing rights	14,761	—	—	14,761
Derivative assets	53	—	—	53
Equity securities	11,041	85	—	11,126
Other assets	—	227	—	227
Total assets	33,818	14,585	94	48,497
Short-term borrowings	—	493	—	493
Derivative liabilities	26	—	—	26
Accrued expenses and other liabilities	231	199	—	430
Long-term debt	5,094	816	93	6,003
Total liabilities	5,351	1,508	93	6,952
Noncontrolling interests	—	34	—	34
Net assets	\$ 28,467	13,043	1	41,511

(1) Excludes certain debt securities related to loans serviced for the Federal National Mortgage Association (FNMA), Federal Home Loan Mortgage Corporation (FHLMC) and Government National Mortgage Association (GNMA).

(2) Certain structures included in transfers that we account for as secured borrowings at December 31, 2018 were presented in VIEs that we consolidate to conform with the current period presentation.

Note 10: Securitizations and Variable Interest Entities (continued)

Transactions with Unconsolidated VIEs

Our transactions with unconsolidated VIEs include predominantly securitizations of residential and commercial mortgage loans and investments in tax credit structures. We have various forms of involvement with VIEs, including servicing, holding senior or subordinated interests, and entering into liquidity arrangements and derivative contracts. Involvements with these unconsolidated VIEs are recorded on our balance sheet in debt and equity securities, loans, MSRs, derivative assets and liabilities, other assets, other liabilities, and long-term debt, as appropriate.

Table 10.2 provides a summary of our exposure to unconsolidated VIEs with which we have significant continuing involvement but for which we are not the primary beneficiary.

We include transactions where we were the sponsor or servicer and also have other significant forms of continuing

involvement. Sponsorship includes transactions where we solely or materially participated in the initial design or structuring of the VIE or marketed the transaction to investors. We consider investments in securities, loans, guarantees, liquidity agreements, commitments and certain derivatives to be other forms of continuing involvement that may be significant. We also include transactions where we transferred assets to a VIE, account for the transfer as a sale, and service the VIE collateral or have other forms of continuing involvement that may be significant (as described above). We exclude certain transactions with unconsolidated VIEs when our continuing involvement is temporary in nature or insignificant in size. We also exclude secured borrowing transactions with unconsolidated VIEs (for information on these transactions, see the Transactions with Consolidated VIEs and Secured Borrowings section in this Note).

Table 10.2: Unconsolidated VIEs

(in millions)	Carrying value – asset (liability)					
	Total VIE assets	Debt and equity interests (1)	Servicing assets and advances	Derivatives	Debt, guarantees and other commitments	Net assets
December 31, 2019						
Residential mortgage loan securitizations:						
Conforming (2)	\$ 1,098,103	1,528	11,931	—	(683)	12,776
Other/nonconforming	5,178	6	152	—	—	158
Commercial mortgage loan securitizations	169,736	2,239	1,069	80	(43)	3,345
Tax credit structures	39,091	12,826	—	—	(4,260)	8,566
Other asset-based finance structures	1,355	157	—	61	(20)	198
Other	1,167	51	—	—	—	51
Total	\$ 1,314,630	16,807	13,152	141	(5,006)	25,094
Maximum exposure to loss						
		Debt and equity interests (1)	Servicing assets and advances	Derivatives	Guarantees and other commitments	Total exposure
Residential mortgage loan securitizations:						
Conforming (2)		\$ 972	11,931	—	937	13,840
Other/nonconforming		6	152	—	—	158
Commercial mortgage loan securitizations		2,239	1,069	80	11,667	15,055
Tax credit structures		12,826	—	—	1,701	14,527
Other asset-based finance structures		157	—	63	91	311
Other		51	—	—	157	208
Total		\$ 16,251	13,152	143	14,553	44,099

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(in millions)	Carrying value - asset (liability)					
	Total VIE assets	Debt and equity interests (1)	Servicing assets	Derivatives	Debt, guarantees and other commitments	Net assets
December 31, 2018						
Residential mortgage loan securitizations:						
Conforming (2)	\$ 1,172,833	3,601	13,811	—	(1,395)	16,017
Other/nonconforming	10,596	453	57	—	—	510
Commercial mortgage loan securitizations	153,350	2,409	893	(22)	(40)	3,240
Tax credit structures	35,185	12,087	—	—	(3,870)	8,217
Other asset-based finance structures	1,520	271	—	49	(20)	300
Other	1,318	183	—	—	—	183
Total	\$ 1,374,802	19,004	14,761	27	(5,325)	28,467
Maximum exposure to loss						
		Debt and equity interests (1)	Servicing assets	Derivatives	Guarantees and other commitments	Total exposure
Residential mortgage loan securitizations:						
Conforming (2)		\$ 2,377	13,811	—	1,183	17,371
Other/nonconforming		453	57	—	—	510
Commercial mortgage loan securitizations		2,409	893	28	11,563	14,893
Tax credit structures		12,087	—	—	1,420	13,507
Other asset-based finance structures		271	—	50	91	412
Other		183	—	—	158	341
Total		\$ 17,780	14,761	78	14,415	47,034

- (1) Includes total equity interests of \$11.4 billion and \$11.0 billion at December 31, 2019 and 2018, respectively. Also includes debt interests in the form of both loans and securities. Excludes certain debt securities held related to loans serviced for FNMA, FHLMC and GNMA.
- (2) Carrying values include assets and related liabilities of \$556 million and \$1.2 billion at December 31, 2019 and 2018, respectively, related to certain unexercised unconditional repurchase options. These amounts represent the carrying value of the loans and associated debt that would be payable if the option was exercised to repurchase eligible loans from GNMA loan securitizations. These amounts are excluded from maximum exposure to loss as we are not obligated to exercise the options.

In Table 10.2, “Total VIE assets” represents the remaining principal balance of assets held by unconsolidated VIEs using the most current information available. For VIEs that obtain exposure to assets synthetically through derivative instruments, the remaining notional amount of the derivative is included in the asset balance. “Carrying value” is the amount in our consolidated balance sheet related to our involvement with the unconsolidated VIEs. “Maximum exposure to loss” is determined as the carrying value of our investment in the VIEs excluding the unconditional repurchase options that have not been exercised, plus the remaining undrawn liquidity and lending commitments, the notional amount of net written derivative contracts, and generally the notional amount of, or stressed loss estimate for, other commitments and guarantees. It represents estimated loss that would be incurred under severe, hypothetical circumstances, for which we believe the possibility is extremely remote, such as where the value of our interests and any associated collateral declines to zero, without any consideration of recovery or offset from any economic hedges. Accordingly, this disclosure is not an indication of expected loss.

RESIDENTIAL MORTGAGE LOAN SECURITIZATIONS Residential mortgage loan securitizations are financed through the issuance of fixed-rate or floating-rate asset-backed securities, which are collateralized by the loans transferred to a VIE. We typically transfer loans we originated to these VIEs, account for the transfers as sales, retain the right to service the loans and may hold other beneficial interests issued by the VIEs. In certain instances, we may service residential mortgage loan securitizations structured by third parties whose loans we did not

originate or transfer. Our residential mortgage loan securitizations include conforming and nonconforming securitizations.

Conforming residential mortgage loan securitizations are those that are guaranteed by the government-sponsored entities (GSEs), such as FNMA and FHLMC, and GNMA. We do not consolidate these securitizations because the GSEs or GNMA hold the power over the VIEs.

The loans sold to the VIEs in nonconforming residential mortgage loan securitizations are those that do not qualify for a GSE guarantee and are not GNMA guaranteed mortgage securitizations of FHA-insured or VA-guaranteed mortgages. We may hold variable interests issued by the VIEs, including senior securities. The nonconforming residential mortgage loan securitizations included in the table are not consolidated because we do not hold any variable interests, or hold variable interests that we do not consider potentially significant, or we are not the primary servicer for a majority of the VIE assets.

Guarantees and other commitments include amounts related to loans sold that we may be required to repurchase, or otherwise indemnify or reimburse the investor or insurer for losses incurred, due to material breach of contractual representations and warranties as well as other retained recourse arrangements. The maximum exposure to loss for material breach of contractual representations and warranties represents a stressed case estimate we utilize for determining stressed case regulatory capital needs and is considered to be a remote scenario.

Note 10: Securitizations and Variable Interest Entities (continued)

COMMERCIAL MORTGAGE LOAN SECURITIZATIONS Commercial mortgage loan securitizations are financed through the issuance of fixed or floating-rate asset-backed securities, which are collateralized by the loans transferred to the VIE. In a typical securitization, we may transfer loans we originate to these VIEs, account for the transfers as sales, retain the right to service the loans and may hold other beneficial interests issued by the VIEs. In certain instances, we may service commercial mortgage loan securitizations structured by third parties whose loans we did not originate or transfer. We typically serve as primary or master servicer of these VIEs. In commercial mortgage loan securitizations, the most significant decisions impacting the performance of the VIE are generally made by the special servicer and the primary and master servicer do not have power over the VIE. We do not consolidate the commercial mortgage loan securitizations included in the disclosure because we do not have power over the majority of the SPE's assets or we do not have a variable interest that could potentially be significant to the VIE.

TAX CREDIT STRUCTURES We co-sponsor and make investments in affordable housing and sustainable energy projects that are designed to generate a return primarily through the realization of federal tax credits. The projects are typically managed by project sponsors who have the power over the VIE's assets. In some instances, our investments in these structures may require that we fund future capital commitments at the discretion of the project sponsors. While the size of our investment in a single entity may at times exceed 50% of the outstanding equity interests, we do not consolidate these structures because we are not the project sponsors.

OTHER ASSET-BASED FINANCE STRUCTURES We engage in various forms of structured finance arrangements with other VIEs, including collateralized loan obligations (CLOs), collateralized debt obligations, and other securitizations collateralized by asset classes other than mortgages. Collateral may include asset-

backed securities, automobile and other transportation loans and leases, student loans and general corporate credit. Generally, a third party sponsors the VIE and also selects and manages the assets. We may participate in structuring or marketing the arrangements, provide financing to the VIE, service one or more of the underlying VIE assets, or enter into derivatives with the VIEs and receive fees for those services. We are not the primary beneficiary of these structures because we neither select nor manage the assets of the VIE.

Loan Sales and Securitization Activity

We periodically transfer consumer and commercial loans and other types of financial assets in securitization and whole loan sale transactions. We typically retain the servicing rights from these sales and may continue to hold other beneficial interests in the transferred financial assets. We may also provide liquidity to investors in the beneficial interests and credit enhancements. Through these transfers we may be exposed to liability under limited amounts of recourse as well as standard representations and warranties we make to purchasers and issuers.

Table 10.3 presents information about transfers during the period of assets to unconsolidated VIEs or third-party investors for which we recorded the transfers as sales and have continuing involvement with the transferred assets. In connection with these transfers, we recorded servicing assets, securities, and a liability for repurchase losses which reflects management's estimate of probable losses related to various representations and warranties for the loans transferred. Each of these interests are initially measured at fair value. Servicing rights are classified as Level 3 measurements, and securities are initially predominantly classified as Level 2.

Sales with continuing involvement include securitizations of conforming residential mortgages that are sold to the GSEs or GNMA. Substantially all transfers to these entities resulted in no gain or loss because the loans were already measured at fair value on a recurring basis.

Table 10.3: Transfers With Continuing Involvement

(in millions)	Year ended December 31,					
	2019		2018		2017	
	Residential mortgages	Commercial mortgages	Residential mortgages	Commercial mortgages	Residential mortgages	Commercial mortgages
Net gains (losses) on sale	\$ 89	330	(10)	280	342	359
Asset balances sold	170,384	18,191	177,805	17,882	213,562	16,696
Servicing rights recognized	1,896	161	1,903	158	2,122	166
Securities recognized	2,747	51	5,030	81	1,414	65
Liability for repurchase losses recognized	18	—	17	—	24	—

Table 10.4 presents the key weighted-average assumptions we used to measure residential MSR's at the date of securitization.

Table 10.4: Residential Mortgage Servicing Rights

	Residential mortgage servicing rights		
	Year ended December 31,		
	2019	2018	2017
Prepayment speed (1)	12.8%	10.6	11.5
Discount rate	7.5	7.4	7.0
Cost to service (\$ per loan) (2)	\$ 101	128	132

- (1) The prepayment speed assumption for residential MSR's includes a blend of prepayment speeds and default rates. Prepayment speed assumptions are influenced by mortgage interest rate inputs as well as our estimation of drivers of borrower behavior.
- (2) Includes costs to service and unreimbursed foreclosure costs, which can vary period to period due to changes in model assumptions and the mix of modified government-guaranteed loans sold to GNMA.

Table 10.5 presents the proceeds related to transfers accounted for as sales in which we have continuing involvement with the transferred financial assets as well as current period cash flows from continuing involvement with previous transfers accounted for as sales. Cash flows from other interests held predominantly include principal and interest payments received on retained bonds and excess cash flows received on interest-only strips. Repurchases of assets represents cash paid to

repurchase loans from investors under representation and warranty obligations or in connection with the exercise of cleanup calls on securitizations. Loss reimbursements is cash paid to reimburse investors for losses on individual loans that are already liquidated. Government insured loans are delinquent loans that we service and have exercised our option to purchase out of GNMA pools. These loans are insured by the FHA or guaranteed by the VA.

Table 10.5: Cash Inflows (Outflows) From Sales and Securitization Activity

(in millions)	Mortgage loans		
	Year ended December 31,		
	2019	2018	2017
Proceeds from securitizations and whole loan sales	\$ 186,615	193,721	228,282
Fees from servicing rights retained	3,149	3,337	3,352
Cash flows from other interests held	468	698	2,218
Repurchases of assets/loss reimbursements:			
Non-agency securitizations and whole loan transactions	(4,441)	(3)	(12)
Government insured loans	(6,168)	(7,775)	(8,600)
Agency securitizations	(95)	(96)	(92)
Servicing advances, net of recoveries (1)	187	154	269

- (1) Cash flows from servicing advances includes principal and interest payments to investors required by servicing agreements.

Note 10: Securitizations and Variable Interest Entities (continued)

Retained Interests from Unconsolidated VIEs

Table 10.6 provides key economic assumptions and the sensitivity of the current fair value of residential MSRs, and other interests held related to unconsolidated VIEs, to immediate adverse changes in those assumptions. Amounts for residential MSRs include purchased servicing rights as well as servicing rights resulting from the transfer of loans. See Note 19 (Fair Values of Assets and Liabilities) for additional information on key economic assumptions for residential MSRs. "Other interests held" were obtained when we securitized residential and commercial mortgage loans. Residential mortgage-backed

securities retained in securitizations issued through GSEs or GNMA are excluded from the table because these securities have a remote risk of credit loss due to the GSE or government guarantee. These securities also have economic characteristics similar to GSE or GNMA mortgage-backed securities that we purchase, which are not included in the table. Subordinated interests include only those bonds whose credit rating was below AAA by a major rating agency at issuance. Senior interests include only those bonds whose credit rating was AAA by a major rating agency at issuance. The information presented excludes trading positions held in inventory.

Table 10.6: Retained Interests from Unconsolidated VIEs

	Residential mortgage servicing rights	Other interests held		
		Interest-only strips	Subordinated bonds	Commercial Senior bonds
(\$ in millions, except cost to service amounts)				
Fair value of interests held at December 31, 2019	\$ 11,517	2	909	352
Expected weighted-average life (in years)	5.3	3.1	7.3	5.5
Key economic assumptions:				
Prepayment speed assumption	11.9%	19.5		
Decrease in fair value from:				
10% adverse change	\$ 537	—		
25% adverse change	1,261	—		
Discount rate assumption	7.2%	12.8	4.0	2.9
Decrease in fair value from:				
100 basis point increase	\$ 464	—	53	16
200 basis point increase	889	—	103	32
Cost to service assumption (\$ per loan)	102			
Decrease in fair value from:				
10% adverse change	253			
25% adverse change	632			
Credit loss assumption			3.1%	—
Decrease in fair value from:				
10% higher losses		\$ 1		—
25% higher losses		4		—
Fair value of interests held at December 31, 2018	\$ 14,649	16	668	309
Expected weighted-average life (in years)	6.5	3.6	7.0	5.7
Key economic assumptions:				
Prepayment speed assumption	9.9%	17.7		
Decrease in fair value from:				
10% adverse change	\$ 530	1		
25% adverse change	1,301	1		
Discount rate assumption	8.1%	14.5	4.3	3.7
Decrease in fair value from:				
100 basis point increase	\$ 615	—	37	14
200 basis point increase	1,176	1	72	28
Cost to service assumption (\$ per loan)	106			
Decrease in fair value from:				
10% adverse change	316			
25% adverse change	787			
Credit loss assumption			5.1%	—
Decrease in fair value from:				
10% higher losses		\$ 2		—
25% higher losses		5		—

In addition to residential MSR included in the previous table, we have a small portfolio of commercial MSRs which are carried at LOCOM with a fair value of \$1.9 billion and \$2.3 billion at December 31, 2019 and 2018, respectively. Prepayment assumptions do not significantly impact values of commercial MSRs and commercial mortgage bonds as most commercial loans include contractual restrictions on prepayment. Servicing costs are not a driver of our MSR value as we are typically primary or master servicer; the higher costs of servicing delinquent and foreclosed loans is generally born by the special servicer. The primary economic driver impacting the fair value of our commercial MSRs is forward interest rates, which are derived from market observable yield curves used to price capital markets instruments. Market interest rates significantly affect interest earned on custodial deposit balances. The sensitivity of the current fair value to an immediate adverse 25% change in the assumption about interest earned on deposit balances at December 31, 2019 and 2018, results in a decrease in fair value of \$205 million and \$320 million, respectively. See Note 11 (Mortgage Banking Activities) for further information on our commercial MSRs.

The sensitivities in the preceding paragraph and table are hypothetical and caution should be exercised when relying on this data. Changes in value based on variations in assumptions

generally cannot be extrapolated because the relationship of the change in the assumption to the change in value may not be linear. Also, the effect of a variation in a particular assumption on the value of the other interests held is calculated independently without changing any other assumptions. In reality, changes in one factor may result in changes in others (for example, changes in prepayment speed estimates could result in changes in the credit losses), which might magnify or counteract the sensitivities.

Off-Balance Sheet Loans

Table 10.7 presents information about the principal balances of off-balance sheet loans that were sold or securitized, including residential mortgage loans sold to FNMA, FHLMC, GNMA and other investors, for which we have some form of continuing involvement (including servicer). Delinquent loans include loans 90 days or more past due and loans in bankruptcy, regardless of delinquency status. For loans sold or securitized where servicing is our only form of continuing involvement, we would only experience a loss if we were required to repurchase a delinquent loan or foreclosed asset due to a breach in representations and warranties associated with our loan sale or servicing contracts.

Table 10.7: Off-Balance Sheet Loans Sold or Securitized

(in millions)	Total loans		Delinquent loans and foreclosed assets (1)		Net charge-offs (3)	
	December 31,		December 31,		Year ended	
	2019	2018	2019	2018	2019	2018
Commercial:						
Real estate mortgage	\$ 112,507	105,173	776	1,008	179	739
Total commercial	112,507	105,173	776	1,008	179	739
Consumer:						
Real estate 1-4 family first mortgage	1,008,446	1,097,128	6,664	8,947	229	466
Real estate 1-4 family junior lien mortgage	13	—	2	—	—	—
Total consumer	1,008,459	1,097,128	6,666	8,947	229	466
Total off-balance sheet sold or securitized loans (2)	\$ 1,120,966	1,202,301	7,442	9,955	408	1,205

(1) Includes \$492 million and \$675 million of commercial foreclosed assets and \$356 million and \$582 million of consumer foreclosed assets at December 31, 2019 and 2018, respectively.

(2) At December 31, 2019 and 2018, the table includes total loans of \$1.0 trillion and \$1.1 trillion, delinquent loans of \$5.2 billion and \$6.4 billion, and foreclosed assets of \$251 million and \$442 million, respectively, for FNMA, FHLMC and GNMA.

(3) Net charge-offs exclude loans sold to FNMA, FHLMC and GNMA as we do not service or manage the underlying real estate upon foreclosure and, as such, do not have access to net charge-off information.

Note 10: Securitizations and Variable Interest Entities (continued)

Transactions with Consolidated VIEs and Secured Borrowings

Table 10.8 presents a summary of financial assets and liabilities for asset transfers accounted for as secured borrowings and involvements with consolidated VIEs. Carrying values of "Assets" are presented using GAAP measurement methods, which may include fair value, credit impairment or other adjustments, and

therefore in some instances will differ from "Total VIE assets." For VIEs that obtain exposure synthetically through derivative instruments, the remaining notional amount of the derivative is included in "Total VIE assets." On the consolidated balance sheet, we separately disclose the consolidated assets of certain VIEs that can only be used to settle the liabilities of those VIEs.

Table 10.8: Transactions with Consolidated VIEs and Secured Borrowings

(in millions)	Total VIE assets	Carrying value			
		Assets	Liabilities	Noncontrolling interests	Net assets
December 31, 2019					
Secured borrowings:					
Residential mortgage securitizations	\$ 81	80	(79)	—	1
Total secured borrowings	81	80	(79)	—	1
Consolidated VIEs:					
Commercial and industrial loans and leases	8,054	8,042	(529)	(16)	7,497
Nonconforming residential mortgage loan securitizations	935	809	(290)	—	519
Commercial real estate loans	4,836	4,836	—	—	4,836
Municipal tender option bond securitizations	401	402	(401)	—	1
Other	279	279	(6)	(27)	246
Total consolidated VIEs	14,505	14,368	(1,226)	(43)	13,099
Total secured borrowings and consolidated VIEs	\$ 14,586	14,448	(1,305)	(43)	13,100
December 31, 2018					
Secured borrowings:					
Residential mortgage securitizations	\$ 95	94	(93)	—	1
Total secured borrowings	95	94	(93)	—	1
Consolidated VIEs:					
Commercial and industrial loans and leases	8,215	8,204	(477)	(14)	7,713
Nonconforming residential mortgage loan securitizations	1,947	1,732	(521)	—	1,211
Commercial real estate loans	3,957	3,957	—	—	3,957
Municipal tender option bond securitizations (1)	627	523	(501)	—	22
Other	169	169	(9)	(20)	140
Total consolidated VIEs	14,915	14,585	(1,508)	(34)	13,043
Total secured borrowings and consolidated VIEs	\$ 15,010	14,679	(1,601)	(34)	13,044

(1) Municipal tender option bond securitizations were reported as secured borrowings at December 31, 2018. These structures were reported as consolidated VIEs at December 31, 2019 to conform with our presentation of other transactions where we transfer assets to a consolidated VIE and use secured borrowing accounting.

We have raised financing through the securitization of certain financial assets in transactions with VIEs accounted for as secured borrowings. We also consolidate VIEs where we are the primary beneficiary. In certain transactions, we provide contractual support in the form of limited recourse and liquidity to facilitate the remarketing of short-term securities issued to third-party investors. Other than this limited contractual support, the assets of the VIEs are the sole source of repayment of the securities held by third parties.

COMMERCIAL AND INDUSTRIAL LOANS AND LEASES We securitize dealer floor plan loans and leases in a revolving master trust entity and retain the subordinated notes and residual equity interests. At December 31, 2019 and 2018, total assets held by the master trust were \$6.5 billion and \$6.7 billion, respectively, and the outstanding senior notes were \$300 million and \$299 million, respectively. As servicer and residual interest holder, we control the key decisions of the trust. We also provide the majority of debt and equity financing to an SPE that engages in lending and leasing to specific vendors and service the underlying collateral. We control the key decisions of the entity and consolidate the entity as primary beneficiary.

NONCONFORMING RESIDENTIAL MORTGAGE LOAN SECURITIZATIONS We have determined we are the primary beneficiary of these securitizations because we have the power to direct the most significant activities of the entity through our role as primary servicer and we also hold variable interests that we have determined to be significant. The nature of our variable interests in these entities may include senior or subordinated beneficial interests issued by the VIE, MSRs and recourse or repurchase reserve liabilities.

COMMERCIAL REAL ESTATE LOANS We purchase local industrial development bonds and credit enhancement from GSEs, which bonds and credit enhancement are placed with a custodian who issues beneficial interests. We own all of the beneficial interests and may also service the underlying mortgages. Through our ownership of the beneficial interests we control the key decisions of the trust including the decision to invest in or divest of a bond and whether to purchase or retain credit support.

MUNICIPAL TENDER OPTION BOND SECURITIZATIONS As part of our normal investment portfolio activities, we consolidate municipal bond trusts that hold highly rated, long-term, fixed-rate municipal bonds, the majority of which are rated AA or better. Our residual interests in these trusts generally allow us to capture the economics of owning the securities outright, and constructively make decisions that significantly impact the economic performance of the municipal bond vehicle, primarily by directing the sale of the municipal bonds owned by the vehicle. We may also serve as remarketing agent or liquidity provider for the trusts should the investors exercise their right to tender the certificates at specified dates. If we cannot remarket the tendered certificates, we are generally obligated to purchase them at par under standby liquidity facilities unless the bond's credit rating has declined below investment grade or there has been an event of default or bankruptcy of the issuer and insurer.

Other Transactions

In addition to the transactions included in the previous tables, we have used wholly-owned trust preferred security VIEs to issue debt securities or preferred equity exclusively to third-party investors. As the sole assets of the VIEs are receivables from us, we do not consolidate the VIEs even though we own all of the voting equity shares of the VIEs, have fully guaranteed the obligations of the VIEs, and may have the right to redeem the third-party securities under certain circumstances. See Note 15 (Long-Term Debt) and Note 20 (Preferred Stock) for additional information about trust preferred securities.

Certain money market funds are also excluded from the previous tables because they are exempt from the consolidation analysis. We voluntarily waived a portion of our management fees for these money market funds to maintain a minimum level of daily net investment income. The amount of fees waived in 2019, 2018 and 2017 was \$40 million, \$45 million, and \$53 million, respectively.

Note 11: Mortgage Banking Activities

Mortgage banking activities, included in the Community Banking and Wholesale Banking operating segments, consist of residential and commercial mortgage originations, sale activity and servicing.

We apply the amortization method to commercial MSR and apply the fair value method to residential MSR. Table 11.1 presents the changes in MSR measured using the fair value method.

Table 11.1: Analysis of Changes in Fair Value MSR

(in millions)	Year ended December 31,		
	2019	2018	2017
Fair value, beginning of year	\$ 14,649	13,625	12,959
Purchases	—	—	541
Servicing from securitizations or asset transfers (1)	1,933	2,010	2,263
Sales and other (2)	(286)	(71)	(23)
Net additions	1,647	1,939	2,781
Changes in fair value:			
Due to changes in valuation model inputs or assumptions:			
Mortgage interest rates (3)	(2,406)	1,337	(103)
Servicing and foreclosure costs (4)	48	818	96
Discount rates (5)	145	(830)	13
Prepayment estimates and other (6)	(356)	(365)	(132)
Net changes in valuation model inputs or assumptions	(2,569)	960	(126)
Changes due to collection/realization of expected cash flows over time (7)	(2,210)	(1,875)	(1,989)
Total changes in fair value	(4,779)	(915)	(2,115)
Fair value, end of year	\$ 11,517	14,649	13,625

- (1) Includes impacts associated with exercising cleanup calls on securitizations as well as our right to repurchase delinquent loans from Government National Mortgage Association (GNMA) loan securitization pools. Total reported MSR may increase upon repurchase due to servicing liabilities associated with these delinquent GNMA loans.
- (2) Includes sales and transfers of MSR, which can result in an increase of total reported MSR if the sales or transfers are related to nonperforming loan portfolios or portfolios with servicing liabilities.
- (3) Includes prepayment speed changes as well as other valuation changes due to changes in mortgage interest rates (such as changes in estimated interest earned on custodial deposit balances).
- (4) Includes costs to service and unreimbursed foreclosure costs.
- (5) Reflects discount rate assumption change, excluding portion attributable to changes in mortgage interest rates.
- (6) Represents changes driven by other valuation model inputs or assumptions including prepayment speed estimation changes and other assumption updates. Prepayment speed estimation changes are influenced by observed changes in borrower behavior and other external factors that occur independent of interest rate changes.
- (7) Represents the reduction in the MSR fair value for the cash flows expected to be collected during the period, net of income accreted due to the passage of time

Table 11.2 presents the changes in amortized MSR.

Table 11.2: Analysis of Changes in Amortized MSR

(in millions)	Year ended December 31,		
	2019	2018	2017
Balance, beginning of year	\$ 1,443	1,424	1,406
Purchases	100	127	115
Servicing from securitizations or asset transfers	161	158	166
Amortization	(274)	(266)	(263)
Balance, end of year (1)	\$ 1,430	1,443	1,424
Fair value of amortized MSR:			
Beginning of year	\$ 2,288	2,025	1,956
End of year	1,872	2,288	2,025

- (1) Commercial amortized MSR are evaluated for impairment purposes by the following risk strata: agency (GSEs) for multi-family properties and non-agency. There was no valuation allowance recorded for the periods presented on the commercial amortized MSR.

We present the components of our managed servicing portfolio in Table 11.3 at unpaid principal balance for loans serviced and subserviced for others and at book value for owned loans serviced.

Table 11.3: Managed Servicing Portfolio

(in billions)	Dec 31, 2019	Dec 31, 2018
Residential mortgage servicing:		
Serviced for others	\$ 1,063	1,164
Owned loans serviced (1)	343	334
Subserviced for others	2	4
Total residential servicing	1,408	1,502
Commercial mortgage servicing:		
Serviced for others	566	543
Owned loans serviced	124	121
Subserviced for others	9	9
Total commercial servicing	699	673
Total managed servicing portfolio	\$ 2,107	2,175
Total serviced for others	\$ 1,629	1,707
Ratio of MSRs to related loans serviced for others	0.79%	0.94

(1) Excludes loans serviced by third parties.

Table 11.4 presents the components of mortgage banking noninterest income.

Table 11.4: Mortgage Banking Noninterest Income

(in millions)	Year ended December 31,		
	2019	2018	2017
Servicing income, net:			
Servicing fees:			
Contractually specified servicing fees	\$ 3,388	3,613	3,603
Late charges	129	162	172
Ancillary fees	143	182	199
Unreimbursed direct servicing costs (1)	(403)	(331)	(582)
Net servicing fees	3,257	3,626	3,392
Changes in fair value of MSRs carried at fair value:			
Due to changes in valuation model inputs or assumptions (2)	(A) (2,569)	960	(126)
Changes due to collection/realization of expected cash flows over time (3)	(2,210)	(1,875)	(1,989)
Total changes in fair value of MSRs carried at fair value	(4,779)	(915)	(2,115)
Amortization	(274)	(266)	(263)
Net derivative gains (losses) from economic hedges (4)	(B) 2,318	(1,072)	413
Total servicing income, net	522	1,373	1,427
Net gains on mortgage loan origination/sales activities (5)	2,193	1,644	2,923
Total mortgage banking noninterest income	\$ 2,715	3,017	4,350
Market-related valuation changes to MSRs, net of hedge results (2)(4)	(A)+(B) \$ (251)	(112)	287

(1) Includes costs associated with foreclosures, unreimbursed interest advances to investors, and other interest costs.

(2) Refer to the analysis of changes in fair value MSRs presented in Table 11.1 in this Note for more detail.

(3) Represents the reduction in the MSR fair value for the cash flows expected to be collected during the period, net of income accreted due to the passage of time.

(4) Represents results from economic hedges used to hedge the risk of changes in fair value of MSRs. See Note 18 (Derivatives) for additional discussion and detail.

(5) Includes net gains (losses) of \$(141) million, \$857 million and \$35 million at December 31, 2019, 2018 and 2017, respectively, related to derivatives used as economic hedges of mortgage loans held for sale and derivative loan commitments.

Note 12: Intangible Assets

Table 12.1 presents the gross carrying value of intangible assets and accumulated amortization.

Table 12.1: Intangible Assets

(in millions)	December 31, 2019			December 31, 2018		
	Gross carrying value	Accumulated amortization	Net carrying value	Gross carrying value	Accumulated amortization	Net carrying value
Amortized intangible assets (1):						
MSRs (2)	\$ 4,422	(2,992)	1,430	4,161	(2,718)	1,443
Core deposit intangibles	—	—	—	12,834	(12,834)	—
Customer relationship and other intangibles	947	(524)	423	3,994	(3,449)	545
Total amortized intangible assets	\$ 5,369	(3,516)	1,853	20,989	(19,001)	1,988
Unamortized intangible assets:						
MSRs (carried at fair value) (2)	\$ 11,517			14,649		
Goodwill	26,390			26,418		
Trademark	14			14		

- (1) Balances are excluded commencing in the period following full amortization.
(2) See Note 11 (Mortgage Banking Activities) for additional information on MSRs.

Table 12.2 provides the current year and estimated future amortization expense for amortized intangible assets. We based our projections of amortization expense shown below on existing

asset balances at December 31, 2019. Future amortization expense may vary from these projections.

Table 12.2: Amortization Expense for Intangible Assets

(in millions)	Amortized MSRs	Customer relationship and other intangibles	Total
Year ended December 31, 2019 (actual)	\$ 274	114	388
Estimate for year ended December 31,			
2020	\$ 263	95	358
2021	227	81	308
2022	203	68	271
2023	176	59	235
2024	152	48	200

Table 12.3 shows the allocation of goodwill to our reportable operating segments.

Table 12.3: Goodwill

(in millions)	Community Banking	Wholesale Banking	Wealth and Investment Management	Consolidated Company
December 31, 2017 (1)	\$ 16,849	8,455	1,283	26,587
Reduction in goodwill related to divested businesses and foreign currency translation	(164)	(5)	—	(169)
December 31, 2018 (1)	\$ 16,685	8,450	1,283	26,418
Reduction in goodwill related to divested businesses and foreign currency translation	—	(21)	(7)	(28)
December 31, 2019 (1)	\$ 16,685	8,429	1,276	26,390

- (1) At December 31, 2017, other assets included Goodwill classified as held-for-sale of \$13 million related to the sales agreement for Wells Fargo Shareowner Services, which closed in February 2018. At December 31, 2019, and December 31, 2018, there was no Goodwill classified as held-for-sale in other assets.

We assess goodwill for impairment at a reporting unit level, which is one level below the operating segments. Our goodwill was not impaired at December 31, 2019 and 2018. The fair values exceeded the carrying amount of our respective reporting units by approximately 6% to 425% at December 31, 2019. See Note 27 (Operating Segments) for further information on management reporting.

Note 13: Deposits

Table 13.1 presents a summary of the time certificates of deposit (CDs) and other time deposits issued by domestic and non-U.S. offices.

Table 13.1: Time Certificates of Deposits and Other Time Deposits

(in billions)	December 31,	
	2019	2018
Total domestic and Non-U.S.	\$ 118.8	130.6
Domestic:		
\$100,000 or more	43.7	42.5
\$250,000 or more	34.6	37.1
Non-U.S.		
\$100,000 or more	4.0	4.6
\$250,000 or more	4.0	4.6

Substantially all CDs and other time deposits issued by domestic and non-U.S. offices were interest bearing. The contractual maturities of these deposits are presented in Table 13.2.

Table 13.2: Contractual Maturities of CDs and Other Time Deposits

(in millions)	December 31, 2019	
2020	\$	88,259
2021		15,429
2022		6,055
2023		4,130
2024		1,906
Thereafter		3,070
Total	\$	118,849

The contractual maturities of the domestic time deposits with a denomination of \$100,000 or more are presented in Table 13.3.

Table 13.3: Contractual Maturities of Domestic Time Deposits

(in millions)	December 31, 2019	
Three months or less	\$	18,759
After three months through six months		10,583
After six months through twelve months		11,766
After twelve months		2,624
Total	\$	43,732

Demand deposit overdrafts of \$542 million and \$624 million were included as loan balances at December 31, 2019 and 2018, respectively.

Note 14: Short-Term Borrowings

Table 14.1 shows selected information for short-term borrowings, which generally mature in less than 30 days. We pledge certain financial instruments that we own to collateralize repurchase agreements and other securities financings. For

additional information, see the “Pledged Assets” section of Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments).

Table 14.1: Short-Term Borrowings

(in millions)	2019		2018		2017	
	Amount	Rate	Amount	Rate	Amount	Rate
As of December 31,						
Federal funds purchased and securities sold under agreements to repurchase	\$ 92,403	1.54%	\$ 92,430	2.65%	\$ 88,684	1.30%
Commercial paper	—	—	—	—	—	—
Other short-term borrowings	12,109	0.60	13,357	1.63	14,572	0.72
Total	\$ 104,512	1.43	\$ 105,787	2.52	\$ 103,256	1.22
Year ended December 31,						
Average daily balance						
Federal funds purchased and securities sold under agreements to repurchase	\$ 102,888	2.11	\$ 90,348	1.78	\$ 82,507	0.90
Commercial paper	—	—	—	—	16	0.95
Other short-term borrowings	12,449	1.20	13,919	0.79	16,399	0.13
Total	\$ 115,337	2.01	\$ 104,267	1.65	\$ 98,922	0.77
Maximum month-end balance						
Federal funds purchased and securities sold under agreements to repurchase (1)	\$ 111,726	N/A	\$ 93,918	N/A	\$ 91,604	N/A
Commercial paper (2)	—	N/A	—	N/A	78	N/A
Other short-term borrowings (3)	14,129	N/A	16,924	N/A	19,439	N/A

N/A- Not applicable

(1) Highest month-end balance in each of the last three years was October 2019, November 2018 and November 2017.

(2) There were no month-end balances in 2019 and 2018; highest month-end balance in 2017 was January.

(3) Highest month-end balance in each of the last three years was February 2019, January 2018 and February 2017.

Note 15: Long-Term Debt

We issue long-term debt denominated in multiple currencies, largely in U.S. dollars. Our issuances have both fixed and floating interest rates. As a part of our overall interest rate risk management strategy, we often use derivatives to manage our exposure to interest rate risk. We also use derivatives to manage our exposure to foreign currency risk. As a result, approximately half of the long-term debt presented below is hedged in a fair value or cash flow hedge relationship. See Note 18 (Derivatives) for further information on qualifying hedge contracts.

Table 15.1 presents a summary of our long-term debt carrying values, reflecting unamortized debt discounts and premiums, and purchase accounting adjustments, where applicable. The interest rates displayed represent the range of contractual rates in effect at December 31, 2019. These interest rates do not include the effects of any associated derivatives designated in a hedge accounting relationship.

Table 15.1: Long-Term Debt

(in millions)	Maturity date(s)	Stated interest rate(s)	December 31,	
			2019	2018
Wells Fargo & Company (Parent only)				
Senior				
Fixed-rate notes (1)	2020-2047	0.38 - 6.75%	\$ 86,618	77,742
Floating-rate notes	2020-2048	0.02-3.24%	16,800	19,553
FixFloat notes	2025-2030	2.41-3.58%	12,030	2,901
Structured notes (2)			8,390	7,984
Total senior debt - Parent			123,838	108,180
Subordinated				
Fixed-rate notes (3)	2023-2046	3.45-7.57%	27,195	25,428
Total subordinated debt - Parent			27,195	25,428
Junior subordinated				
Fixed-rate notes - trust securities	2029-2036	5.95-7.95%	1,428	1,308
Floating-rate notes	2027	2.50-3.00%	318	308
Total junior subordinated debt - Parent (4)			1,746	1,616
Total long-term debt - Parent (3)			152,779	135,224
Wells Fargo Bank, N.A., and other bank entities (Bank)				
Senior				
Fixed-rate notes	2020-2023	2.40-3.63%	9,364	14,222
Floating-rate notes	2020-2053	1.64-2.55%	10,617	6,617
FixFloat notes	2021-2022	2.08-3.33%	5,097	1,998
Fixed-rate advances - Federal Home Loan Bank (FHLB)	2020-2031	3.83-7.50%	41	51
Floating-rate advances - FHLB	2020-2022	1.83-2.31%	32,950	53,825
Structured notes (2)			1,914	1,646
Finance leases	2020-2029	1.69-17.78%	32	36
Total senior debt - Bank			60,015	78,395
Subordinated				
Fixed-rate notes	2023-2038	5.25-7.74%	5,374	5,199
Total subordinated debt - Bank			5,374	5,199
Junior subordinated				
Floating-rate notes	2027	2.48-2.65%	363	352
Total junior subordinated debt - Bank (4)			363	352
Long-term debt issued by VIE - Fixed rate	2037	6.00%	17	160
Long-term debt issued by VIE - Floating rate	2020-2038	2.38-4.62%	570	656
Mortgage notes and other debt (5)	2020-2057	9.20%	6,185	6,637
Total long-term debt - Bank			72,524	91,399

(continued on following page)

Note 15: Long-Term Debt (continued)

(continued from previous page)

(in millions)	Maturity date(s)	Stated interest rate(s)	December 31,	
			2019	2018
Other consolidated subsidiaries				
Senior				
Fixed-rate notes	2021-2023	3.04-3.46%	1,352	2,383
Structured notes (2)			1,503	6
Finance leases	2020	3.71%	1	—
Total senior debt - Other consolidated subsidiaries			2,856	2,389
Mortgage notes and other	2026	3.27%	32	32
Total long-term debt - Other consolidated subsidiaries			2,888	2,421
Total long-term debt			\$ 228,191	229,044

(1) Includes \$66 million of outstanding zero coupon callable notes at December 31, 2019.

(2) Included in the table are certain structured notes that have coupon or repayment terms linked to the performance of debt or equity securities, an embedded equity, commodity, or currency index, or basket of indices accounted for separately from the note as a free-standing derivative, and the maturity may be accelerated based on the value of a referenced index or security. For information on embedded derivatives, see the "Derivatives Not Designated as Hedging Instruments" section in Note 18 (Derivatives). In addition, a major portion consists of zero coupon callable notes where interest is paid as part of the final redemption amount.

(3) Includes fixed-rate subordinated notes issued by the Parent at a discount of \$128 million and \$131 million in 2019 and 2018, respectively, and debt issuance costs of \$2 million in both 2019 and 2018, to effect a modification of Wells Fargo Bank, N.A., notes. These subordinated notes are carried at their par amount on the balance sheet of the Parent presented in Note 28 (Parent-Only Financial Statements). In addition, Parent long-term debt presented in Note 28 also includes affiliate related issuance costs of \$281 million and \$278 million in 2019 and 2018, respectively.

(4) Represents junior subordinated debentures held by unconsolidated wholly-owned trusts formed for the sole purpose of issuing trust preferred securities. See Note 10 (Securitizations and Variable Interest Entities) for additional information.

(5) Largely relates to unfunded commitments for LIHTC investments. For additional information, see Note 8 (Equity Securities).

We issue long-term debt in a variety of maturities and currencies to achieve cost-efficient funding and to maintain an appropriate maturity profile. Long-term debt of \$228.2 billion at December 31, 2019, decreased \$853 million from December 31, 2018. We issued \$53.4 billion of long-term debt in 2019.

The aggregate carrying value of long-term debt that matures (based on contractual payment dates) as of December 31, 2019, in each of the following five years and thereafter is presented in Table 15.2.

Table 15.2: Maturity of Long-Term Debt

(in millions)	December 31, 2019						
	2020	2021	2022	2023	2024	Thereafter	Total
Wells Fargo & Company (Parent Only)							
Senior notes	\$ 13,429	18,163	18,091	11,104	9,387	53,664	123,838
Subordinated notes	—	—	—	3,653	737	22,805	27,195
Junior subordinated notes	—	—	—	—	—	1,746	1,746
Total long-term debt - Parent							
	13,429	18,163	18,091	14,757	10,124	78,215	152,779
Wells Fargo Bank, N.A., and other bank entities (Bank)							
Senior notes	23,415	27,865	5,585	2,884	6	260	60,015
Subordinated notes	—	—	—	1,071	—	4,303	5,374
Junior subordinated notes	—	—	—	—	—	363	363
Securitizations and other bank debt	2,658	1,138	633	224	157	1,962	6,772
Total long-term debt - Bank							
	26,073	29,003	6,218	4,179	163	6,888	72,524
Other consolidated subsidiaries							
Senior notes	144	1,761	93	435	118	305	2,856
Securitizations and other bank debt	—	—	—	—	—	32	32
Total long-term debt - Other consolidated subsidiaries							
	144	1,761	93	435	118	337	2,888
Total long-term debt							
	\$ 39,646	48,927	24,402	19,371	10,405	85,440	228,191

As part of our long-term and short-term borrowing arrangements, we are subject to various financial and operational covenants. Some of the agreements under which debt has been issued have provisions that may limit the merger or sale of certain subsidiary banks and the issuance of capital stock or convertible securities by certain subsidiary banks. At December 31, 2019, we were in compliance with all the covenants.

Note 16: Guarantees, Pledged Assets and Collateral, and Other Commitments

Guarantees are contracts that contingently require us to make payments to a guaranteed party based on an event or a change in an underlying asset, liability, rate or index. Guarantees are generally in the form of standby letters of credit, securities

lending and other indemnifications, written options, recourse obligations, and other types of similar arrangements. Table 16.1 shows carrying value, maximum exposure to loss on our guarantees and the related non-investment grade amounts.

Table 16.1: Guarantees – Carrying Value and Maximum Exposure to Loss

(in millions)	Carrying value of obligation (asset)	Maximum exposure to loss					
		Expires in one year or less	Expires after one year through three years	Expires after three years through five years	Expires after five years	Total	Non-investment grade
December 31, 2019							
Standby letters of credit	\$ 36	11,569	4,460	2,812	467	19,308	7,104
Direct pay letters of credit	—	1,861	3,815	824	105	6,605	1,184
Written options (1)	(345)	17,088	10,869	2,341	273	30,571	18,113
Loans and MLHFS sold with recourse (2)	52	114	576	1,356	10,050	12,096	9,835
Exchange and clearing house guarantees	—	—	—	—	4,817	4,817	—
Other guarantees and indemnifications (3)	1	785	1	3	809	1,598	698
Total guarantees	\$ (256)	31,417	19,721	7,336	16,521	74,995	36,934
December 31, 2018							
Standby letters of credit (4)	\$ 40	10,947	4,649	2,872	461	18,929	7,017
Direct pay letters of credit (4)	—	3,689	3,248	526	36	7,499	1,010
Written options (1)	(185)	17,243	10,502	3,066	400	31,211	21,732
Loans and MLHFS sold with recourse (2)	54	104	653	1,207	10,163	12,127	9,079
Exchange and clearing house guarantees (4)	—	—	—	—	2,922	2,922	—
Other guarantees and indemnifications (3), (4)	1	889	1	3	1,081	1,974	753
Total guarantees	\$ (90)	32,872	19,053	7,674	15,063	74,662	39,591

- (1) Written options, which are in the form of derivatives, are also included in the derivative disclosures in Note 18 (Derivatives). Carrying value net asset position is a result of certain deferred premium option trades.
- (2) Represent recourse provided, predominantly to the GSEs, on loans sold under various programs and arrangements.
- (3) Includes indemnifications provided to certain third-party clearing agents. Outstanding customer obligations under these arrangements were \$80 million and \$70 million with related collateral of \$696 million and \$974 million at December 31, 2019 and 2018, respectively.
- (4) Prior period amounts have been revised to conform with the current period presentation.

“Maximum exposure to loss” and “Non-investment grade” are required disclosures under GAAP. Maximum exposure to loss represents the estimated loss that would be incurred under an assumed hypothetical circumstance, despite what we believe is a remote possibility, where the value of our interests and any associated collateral declines to zero. Maximum exposure to loss estimates in Table 16.1 do not reflect economic hedges or collateral we could use to offset or recover losses we may incur under our guarantee agreements. Accordingly, this required disclosure is not an indication of expected loss. We believe the carrying value, which is either fair value, or the allowance for lending-related commitments, is more representative of our exposure to loss.

Non-investment grade represents those guarantees on which we have a higher risk of performance under the terms of the guarantee. If the underlying assets under the guarantee are non-investment grade (that is, an external rating that is below investment grade or an internal credit default grade that is equivalent to a below investment grade external rating), we consider the risk of performance to be high. Internal credit default grades are determined based upon the same credit policies that we use to evaluate the risk of payment or performance when making loans and other extensions of credit. Credit quality indicators we usually consider in evaluating risk of payments or performance are described in Note 6 (Loans and Allowance for Credit Losses).

STANDBY LETTERS OF CREDIT We issue standby letters of credit, which include performance and financial guarantees, for customers in connection with contracts between our customers and third parties. We also originate multipurpose lending commitments under which borrowers have the option to draw on the facility in one of several forms, including as a standby letter of credit. Standby letters of credit are conditional lending commitments where we are obligated to make payment to a third party on behalf of a customer if the customer fails to meet their contractual obligations. Total maximum exposure to loss includes the portion of multipurpose lending facilities for which we have issued standby letters of credit under the commitments. We consider the credit risk in standby letters of credit and commercial and similar letters of credit in determining the ACL.

DIRECT PAY LETTERS OF CREDIT We issue direct pay letters of credit to serve as credit enhancements for certain bond issuances. Beneficiaries (bond trustees) may draw upon these instruments to make scheduled principal and interest payments, redeem all outstanding bonds because a default event has occurred, or for other reasons as permitted by the agreement. We consider the credit risk in direct pay letters of credit in determining the ACL.

WRITTEN OPTIONS We enter into certain derivative contracts that have the characteristics of a guarantee. These contracts include written put options that give the counterparty the right to sell to us an underlying instrument held by the counterparty at

Note 16: Guarantees, Pledged Assets and Collateral, and Other Commitments (continued)

a specified price by a specified date. They also include certain written options that require us to make a payment for increases in fair value of assets held by the counterparty. These written option contracts generally permit or require net settlement. While these derivative transactions expose us to risk if the option is exercised, we manage this risk by entering into offsetting trades or by taking short positions in the underlying instrument. We offset market risk related to options written to customers with cash securities or other offsetting derivative transactions. Additionally, for certain of these contracts, we require the counterparty to pledge the underlying instrument as collateral for the transaction. Our ultimate obligation under written options is based on future market conditions and is only quantifiable at settlement. See Note 18 (Derivatives) for additional information regarding written derivative contracts.

LOANS AND MLHFS SOLD WITH RECOURSE In certain sales and securitizations of loans, including mortgage loans, we provide recourse to the buyer whereby we are required to indemnify the buyer for any loss on the loan up to par value plus accrued interest. We provide recourse, predominantly to GSEs, on loans sold under various programs and arrangements. Substantially all of these programs and arrangements require that we share in the loans' credit exposure for their remaining life by providing recourse to the GSE, up to 33.33% of actual losses incurred on a pro-rata basis in the event of borrower default. Under the remaining recourse programs and arrangements, if certain events occur within a specified period of time from transfer date, we have to provide limited recourse to the buyer to indemnify them for losses incurred for the remaining life of the loans. The maximum exposure to loss reported in Table 16.1 represents the outstanding principal balance of the loans sold or securitized that are subject to recourse provisions or the maximum losses per the contractual agreements. However, we believe the likelihood of loss of the entire balance due to these recourse agreements is remote, and amounts paid can be recovered in whole or in part from the sale of collateral. We also provide representation and warranty guarantees on loans sold under the various recourse programs and arrangements. Our loss exposure relative to these guarantees is separately considered and provided for, as necessary, in determination of our liability for loan repurchases due to breaches of representation and warranties.

EXCHANGE AND CLEARING HOUSE GUARANTEES We are members of several securities and derivatives exchanges and clearing houses, both in the U.S. and in countries outside the U.S., that we use to clear our trades and those of our customers. It is common that all members in these organizations are required to collectively guarantee the performance of other members and of the organization. Our obligations under the guarantees are generally a pro-rata share based on either a fixed amount or a multiple of the guarantee fund we are required to maintain with these organizations. Some membership rules require members to assume a pro-rata share of losses resulting from another member's default or from non-member default losses after applying the guarantee fund. We have not recorded a liability for these arrangements as of the dates presented in Table 16.1 because we believe the likelihood of loss is remote.

OTHER GUARANTEES AND INDEMNIFICATIONS We have contingent performance arrangements related to various customer relationships and lease transactions. We are required to pay the counterparties to these agreements if third parties default on certain obligations.

Under certain factoring arrangements, we may be required to purchase trade receivables from third parties, if receivable debtors default on their payment obligations.

We use certain third-party clearing agents to clear and settle transactions on behalf of some of our institutional brokerage customers. We indemnify the clearing agents against loss that could occur for non-performance by our customers on transactions that are not sufficiently collateralized. Transactions subject to the indemnifications may include customer obligations related to the settlement of margin accounts and short positions, such as written call options and securities borrowing transactions.

We enter into other types of indemnification agreements in the ordinary course of business under which we agree to indemnify third parties against any damages, losses and expenses incurred in connection with legal and other proceedings arising from relationships or transactions with us. These relationships or transactions include those arising from service as a director or officer of the Company, underwriting agreements relating to our securities, acquisition agreements and various other business transactions or arrangements. Because the extent of our obligations under these agreements depends entirely upon the occurrence of future events, we are unable to determine our potential future liability under these agreements. We do, however, record a liability for residential mortgage loans that we expect to repurchase pursuant to various representations and warranties.

GUARANTEES OF SUBSIDIARIES In the normal course of business, the Parent may provide counterparties with guarantees related to its subsidiaries' obligations. These obligations are included in the Company's consolidated balance sheets or are reflected as off-balance sheet commitments, and therefore, the Parent has not recognized a separate liability for these guarantees.

The Parent fully and unconditionally guarantees the payment of principal, interest, and any other amounts that may be due on securities that its 100% owned finance subsidiary, Wells Fargo Finance LLC, may issue. These guaranteed liabilities were \$1.6 billion and \$5 million at December 31, 2019 and 2018, respectively. These guarantees rank on parity with all of the Parent's other unsecured and unsubordinated indebtedness.

Pledged Assets

Table 16.2 provides the carrying amount of on-balance sheet pledged assets and the fair value of off-balance sheet pledged assets.

TRADING RELATED ACTIVITY Our trading businesses may pledge debt and equity securities in connection with securities sold under agreements to repurchase (repurchase agreements) and securities lending arrangements. Substantially all of the trading activity pledged collateral is eligible to be repledged or sold by the secured party. The collateral that we pledge related to our trading activities may include our own collateral as well as collateral that we have received from third parties and have the right to repledge.

NON-TRADING RELATED ACTIVITY As part of our liquidity management strategy, we may pledge loans, debt securities, and other assets to secure trust and public deposits, borrowings and letters of credit from the Federal Home Loan Bank (FHLB) and FRB and for other purposes as required or permitted by law or

insurance statutory requirements. Substantially all of the non-trading activity pledged collateral is not eligible to be repledged or sold by the secured party.

Table 16.2 excludes:

- Pledged assets of consolidated VIEs of \$14.4 billion and \$14.6 billion at December 31, 2019 and 2018, respectively, which can only be used to settle the liabilities of those entities;
- Assets pledged in transactions with VIEs accounted for as secured borrowings of \$80 million and \$94 million at December 31, 2019 and 2018, respectively; and
- Pledged loans recorded on our balance sheet of \$568 million and \$1.2 billion at December 31, 2019 and 2018, respectively, representing certain delinquent loans that are eligible for repurchase from GNMA loan securitizations.

See Note 10 (Securitizations and Variable Interest Entities) for additional information on consolidated VIE assets and secured borrowings.

Table 16.2: Pledged Assets

(in millions)	Dec 31, 2019	Dec 31, 2018
Related to trading activities:		
Debt securities	\$ 106,105	96,616
Equity securities	6,204	9,695
Total pledged assets related to trading activities (1)	112,309	106,311
Related to non-trading activities:		
Debt securities and other	65,047	62,438
Mortgage loans held for sale (2)	2,266	7,439
Loans (2)	406,106	446,455
Total pledged assets related to non-trading activities	473,419	516,332
Total pledged assets	\$ 585,728	622,643

(1) Includes securities collateral received from third parties that we have repledged of \$60.1 billion and \$60.8 billion as of December 31, 2019 and 2018, respectively.

(2) Prior period amounts have been revised to conform with the current period presentation.

Securities Financing Activities

We enter into resale and repurchase agreements and securities borrowing and lending agreements (collectively, “securities financing activities”) typically to finance trading positions (including securities and derivatives), acquire securities to cover short trading positions, accommodate customers’ financing needs, and settle other securities obligations. These activities are conducted through our broker-dealer subsidiaries and, to a lesser extent, through other bank entities. Most of our securities financing activities involve high-quality, liquid securities such as U.S. Treasury securities and government agency securities and, to a lesser extent, less liquid securities, including equity securities, corporate bonds and asset-backed securities. We account for these transactions as collateralized financings in which we typically receive or pledge securities as collateral. We believe these financing transactions generally do not have material credit risk given the collateral provided and the related monitoring processes.

OFFSETTING OF SECURITIES FINANCING ACTIVITIES Table 16.3 presents resale and repurchase agreements subject to master repurchase agreements (MRA) and securities borrowing and lending agreements subject to master securities lending agreements (MSLA). We account for transactions subject to

these agreements as collateralized financings, and those with a single counterparty are presented net on our balance sheet, provided certain criteria are met that permit balance sheet netting. Most transactions subject to these agreements do not meet those criteria and thus are not eligible for balance sheet netting.

Collateral we pledged consists of non-cash instruments, such as securities or loans, and is not netted on the balance sheet against the related liability. Collateral we received includes securities or loans and is not recognized on our balance sheet. Collateral pledged or received may be increased or decreased over time to maintain certain contractual thresholds, as the assets underlying each arrangement fluctuate in value. Generally, these agreements require collateral to exceed the asset or liability recognized on the balance sheet. The following table includes the amount of collateral pledged or received related to exposures subject to enforceable MRAs or MSLAs. While these agreements are typically over-collateralized, U.S. GAAP requires disclosure in this table to limit the reported amount of such collateral to the amount of the related recognized asset or liability for each counterparty.

In addition to the amounts included in Table 16.3, we also have balance sheet netting related to derivatives that is disclosed in Note 18 (Derivatives).

Note 16: Guarantees, Pledged Assets and Collateral, and Other Commitments (continued)

Table 16.3: Offsetting – Securities Financing Activities

(in millions)	Dec 31, 2019	Dec 31, 2018
Assets:		
Resale and securities borrowing agreements		
Gross amounts recognized	\$ 140,773	112,662
Gross amounts offset in consolidated balance sheet (1)	(19,180)	(15,258)
Net amounts in consolidated balance sheet (2)	121,593	97,404
Collateral not recognized in consolidated balance sheet (3)	(120,786)	(96,734)
Net amount (4)	\$ 807	670
Liabilities:		
Repurchase and securities lending agreements		
Gross amounts recognized (5)	\$ 111,038	106,248
Gross amounts offset in consolidated balance sheet (1)	(19,180)	(15,258)
Net amounts in consolidated balance sheet (6)	91,858	90,990
Collateral pledged but not netted in consolidated balance sheet (7)	(91,709)	(90,798)
Net amount (8)	\$ 149	192

- (1) Represents recognized amount of resale and repurchase agreements with counterparties subject to enforceable MRAs that have been offset in the consolidated balance sheet.
- (2) Includes \$102.1 billion and \$80.1 billion, respectively, classified on our consolidated balance sheet in federal funds sold and securities purchased under resale agreements at December 31, 2019 and 2018. Also includes securities purchased under long-term resale agreements (generally one year or more) classified in loans, which totaled \$19.5 billion and \$17.3 billion, at December 31, 2019 and 2018, respectively.
- (3) Represents the fair value of collateral we have received under enforceable MRAs or MSLAs, limited in the table above to the amount of the recognized asset due from each counterparty. At December 31, 2019 and 2018, we have received total collateral with a fair value of \$150.9 billion and \$123.1 billion, respectively, all of which we have the right to sell or repledge. These amounts include securities we have sold or repledged to others with a fair value of \$59.1 billion at December 31, 2019, and \$60.8 billion at December 31, 2018.
- (4) Represents the amount of our exposure that is not collateralized and/or is not subject to an enforceable MRA or MSLA.
- (5) For additional information on underlying collateral and contractual maturities, see the "Repurchase and Securities Lending Agreements" section in this Note.
- (6) Amount is classified in short-term borrowings on our consolidated balance sheet.
- (7) Represents the fair value of collateral we have pledged, related to enforceable MRAs or MSLAs, limited in the table above to the amount of the recognized liability owed to each counterparty. At December 31, 2019 and 2018, we have pledged total collateral with a fair value of \$113.3 billion and \$108.8 billion, respectively, substantially all of which may be sold or repledged by the counterparty.
- (8) Represents the amount of our obligation that is not covered by pledged collateral and/or is not subject to an enforceable MRA or MSLA.

REPURCHASE AND SECURITIES LENDING AGREEMENTS Securities sold under repurchase agreements and securities lending arrangements are effectively short-term collateralized borrowings. In these transactions, we receive cash in exchange for transferring securities as collateral and recognize an obligation to reacquire the securities for cash at the transaction's maturity. These types of transactions create risks, including (1) the counterparty may fail to return the securities at maturity, (2) the fair value of the securities transferred may decline below the amount of our obligation to reacquire the securities, and therefore create an obligation for us to pledge additional amounts, and (3) the counterparty may accelerate the maturity on demand, requiring us to reacquire the security prior to contractual maturity. We attempt to mitigate these risks in various ways. Most of our collateral consists of highly liquid securities. In addition, we underwrite and monitor the financial strength of our counterparties, monitor the fair value of collateral pledged relative to contractually required repurchase amounts, and monitor that our collateral is properly returned through the clearing and settlement process in advance of our cash repayment. Table 16.4 provides the gross amounts recognized on the balance sheet (before the effects of offsetting) of our liabilities for repurchase and securities lending agreements disaggregated by underlying collateral type.

Table 16.4: Gross Obligations by Underlying Collateral Type

(in millions)	Dec 31, 2019	Dec 31, 2018
Repurchase agreements:		
Securities of U.S. Treasury and federal agencies	\$ 48,161	38,408
Securities of U.S. States and political subdivisions	104	159
Federal agency mortgage-backed securities	44,737	47,241
Non-agency mortgage-backed securities	1,818	1,875
Corporate debt securities	7,126	6,191
Asset-backed securities	1,844	2,074
Equity securities	1,674	992
Other	705	340
Total repurchases	106,169	97,280
Securities lending arrangements:		
Securities of U.S. Treasury and federal agencies	163	222
Federal agency mortgage-backed securities	—	2
Corporate debt securities	223	389
Equity securities (1)	4,481	8,349
Other	2	6
Total securities lending	4,869	8,968
Total repurchases and securities lending	\$ 111,038	106,248

(1) Equity securities are generally exchange traded and represent collateral received from third parties that has been repledged. We received the collateral through either margin lending agreements or contemporaneous securities borrowing transactions with other counterparties.

Table 16.5 provides the contractual maturities of our gross obligations under repurchase and securities lending agreements.

Table 16.5: Contractual Maturities of Gross Obligations

(in millions)	Overnight/ continuous	Up to 30 days	30-90 days	>90 days	Total gross obligation
December 31, 2019					
Repurchase agreements	\$ 79,793	17,681	4,825	3,870	106,169
Securities lending arrangements	4,724	—	145	—	4,869
Total repurchases and securities lending (1)	\$ 84,517	17,681	4,970	3,870	111,038
December 31, 2018					
Repurchase agreements	\$ 86,574	3,244	2,153	5,309	97,280
Securities lending arrangements	8,669	—	299	—	8,968
Total repurchases and securities lending (1)	\$ 95,243	3,244	2,452	5,309	106,248

(1) Securities lending is executed under agreements that allow either party to terminate the transaction without notice, while repurchase agreements have a term structure to them that technically matures at a point in time. The overnight/continuous repurchase agreements require election of both parties to roll the trade rather than the election to terminate the arrangement as in securities lending.

OTHER COMMITMENTS To meet the financing needs of our customers, we may enter into commitments to purchase debt and equity securities to provide capital for their funding, liquidity or other future needs. As of December 31, 2019 and 2018, we had commitments to purchase debt securities of \$18 million and \$335 million, respectively, and commitments to purchase equity securities of \$2.7 billion and \$2.5 billion, respectively.

As part of maintaining our memberships in certain clearing organizations, we are required to stand ready to provide liquidity to sustain market clearing activity in the event unforeseen events occur or are deemed likely to occur. Certain of these obligations are guarantees of other members' performance and accordingly are included in Table 16.1.

Also, we have commitments to purchase loans and securities under resale agreements from certain counterparties, including central clearing organizations. The amount of our unfunded contractual commitments was \$7.5 billion and \$12.4 billion as of December 31, 2019 and 2018, respectively.

Given the nature of these commitments, they are excluded from Table 6.4 (Unfunded Credit Commitments) in Note 6 (Loans and Allowance for Credit Losses).

Note 17: Legal Actions

Wells Fargo and certain of our subsidiaries are involved in a number of judicial, regulatory, governmental, arbitration, and other proceedings or investigations concerning matters arising from the conduct of our business activities, and many of those proceedings and investigations expose Wells Fargo to potential financial loss. These proceedings and investigations include actions brought against Wells Fargo and/or our subsidiaries with respect to corporate-related matters and transactions in which Wells Fargo and/or our subsidiaries were involved. In addition, Wells Fargo and our subsidiaries may be requested to provide information or otherwise cooperate with government authorities in the conduct of investigations of other persons or industry groups.

Although there can be no assurance as to the ultimate outcome, Wells Fargo and/or our subsidiaries have generally denied, or believe we have a meritorious defense and will deny, liability in all significant legal actions pending against us, including the matters described below, and we intend to defend vigorously each case, other than matters we describe as having settled. We establish accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. For such accruals, we record the amount we consider to be the best estimate within a range of potential losses that are both probable and estimable; however, if we cannot determine a best estimate, then we record the low end of the range of those potential losses. The actual costs of resolving legal actions may be substantially higher or lower than the amounts accrued for those actions.

ATM ACCESS FEE LITIGATION In October 2011, plaintiffs filed a putative class action, *Mackmin, et al. v. Visa, Inc. et al.*, against Wells Fargo & Company, Wells Fargo Bank, N.A., Visa, MasterCard, and several other banks in the United States District Court for the District of Columbia. Plaintiffs allege that the Visa and MasterCard requirement that if an ATM operator charges an access fee on Visa and MasterCard transactions, then that fee cannot be greater than the access fee charged for transactions on other networks, violates antitrust rules. Plaintiffs seek treble damages, restitution, injunctive relief, and attorneys' fees where available under federal and state law. Two other antitrust cases that make similar allegations were filed in the same court, but these cases did not name Wells Fargo as a defendant. On February 13, 2013, the district court granted defendants' motions to dismiss the three actions. Plaintiffs appealed the dismissals and, on August 4, 2015, the United States Court of Appeals for the District of Columbia Circuit vacated the district court's decisions and remanded the three cases to the district court for further proceedings. On June 28, 2016, the United States Supreme Court granted defendants' petitions for writ of certiorari to review the decisions of the United States Court of Appeals for the District of Columbia. On November 17, 2016, the United States Supreme Court dismissed the petitions as improvidently granted, and the three cases returned to the district court for further proceedings.

AUTOMOBILE LENDING MATTERS On April 20, 2018, the Company entered into consent orders with the Office of the Comptroller of the Currency (OCC) and the Consumer Financial Protection Bureau (CFPB) to resolve, among other things, investigations by the agencies into the Company's compliance risk management program and its past practices involving certain automobile collateral protection insurance (CPI) policies and certain mortgage interest rate lock extensions. The consent orders

require remediation to customers and the payment of a total of \$1.0 billion in civil money penalties to the agencies. In July 2017, the Company announced a plan to remediate customers who may have been financially harmed due to issues related to automobile CPI policies purchased through a third-party vendor on their behalf. Multiple putative class action cases alleging, among other things, unfair and deceptive practices relating to these CPI policies, have been filed against the Company and consolidated into one multi-district litigation in the United States District Court for the Central District of California. The Company has reached an agreement to resolve the multi-district litigation pursuant to which the Company has agreed to pay, consistent with its remediation obligations under the consent orders, approximately \$547 million in remediation to customers with CPI policies placed between October 15, 2005, and September 30, 2016. The settlement amount is not incremental to the Company's remediation obligations under the consent orders, but instead encompasses those obligations, including remediation payments to date. The settlement amount is subject to change as the Company finalizes its remediation activity under the consent orders. In addition, the Company has agreed to contribute \$1 million to a common fund for the class. The district court granted final approval of the settlement on November 21, 2019. A putative class of shareholders also filed a securities fraud class action against the Company and its executive officers alleging material misstatements and omissions of CPI-related information in the Company's public disclosures. In addition, the Company is subject to a class action lawsuit in the United States District Court for the Central District of California alleging that customers are entitled to refunds related to the unused portion of guaranteed automobile protection (GAP) waiver or insurance agreements between the customer and dealer and, by assignment, the lender. Allegations related to the CPI and GAP programs are among the subjects of shareholder derivative lawsuits pending in federal and state court in California. The court dismissed the state court action in September 2018, but plaintiffs filed an amended complaint in November 2018. The parties to the state court action have entered into an agreement to resolve the action pursuant to which the Company will pay plaintiffs' attorneys' fees and undertake certain business and governance practices. The state court granted final approval of the settlement on January 15, 2020. These and other issues related to the origination, servicing, and collection of consumer automobile loans, including related insurance products, have also subjected the Company to formal or informal inquiries, investigations, or examinations from federal and state government agencies. In December 2018, the Company entered into an agreement with all 50 state Attorneys General and the District of Columbia to resolve an investigation into the Company's retail sales practices, CPI and GAP, and mortgage interest rate lock matters, pursuant to which the Company paid \$575 million.

CONSUMER DEPOSIT ACCOUNT RELATED REGULATORY INVESTIGATION The CFPB is conducting an investigation into whether customers were unduly harmed by the Company's historical practices associated with the freezing (and, in many cases, closing) of consumer deposit accounts after the Company detected suspected fraudulent activity (by third parties or account holders) that affected those accounts.

FIDUCIARY AND CUSTODY ACCOUNT FEE CALCULATIONS Federal government agencies are conducting formal or informal

inquiries, investigations, or examinations regarding fee calculations within certain fiduciary and custody accounts in the Company's investment and fiduciary services business, which is part of the wealth management business within the Wealth and Investment Management (WIM) operating segment. The Company has determined that there have been instances of incorrect fees being applied to certain assets and accounts, resulting in both overcharges and undercharges to customers.

FOREIGN EXCHANGE BUSINESS Federal government agencies, including the United States Department of Justice (Department of Justice), are investigating or examining certain activities in the Company's foreign exchange business, including whether customers may have received pricing inconsistent with commitments made to those customers. These matters are at varying stages. The Company has responded, and continues to respond, to requests from a number of the foregoing and has discussed the potential resolution of some of the matters.

INTERCHANGE LITIGATION Plaintiffs representing a putative class of merchants have filed putative class actions, and individual merchants have filed individual actions, against Wells Fargo Bank, N.A., Wells Fargo & Company, Wachovia Bank, N.A., and Wachovia Corporation regarding the interchange fees associated with Visa and MasterCard payment card transactions. Visa, MasterCard, and several other banks and bank holding companies are also named as defendants in these actions. These actions have been consolidated in the United States District Court for the Eastern District of New York. The amended and consolidated complaint asserts claims against defendants based on alleged violations of federal and state antitrust laws and seeks damages, as well as injunctive relief. Plaintiff merchants allege that Visa, MasterCard, and payment card issuing banks unlawfully colluded to set interchange rates. Plaintiffs also allege that enforcement of certain Visa and MasterCard rules and alleged tying and bundling of services offered to merchants are anticompetitive. Wells Fargo and Wachovia, along with other defendants and entities, are parties to Loss and Judgment Sharing Agreements, which provide that they, along with other entities, will share, based on a formula, in any losses from the Interchange Litigation. On July 13, 2012, Visa, MasterCard, and the financial institution defendants, including Wells Fargo, signed a memorandum of understanding with plaintiff merchants to resolve the consolidated class action and reached a separate settlement in principle of the consolidated individual actions. The settlement payments to be made by all defendants in the consolidated class and individual actions totaled approximately \$6.6 billion before reductions applicable to certain merchants opting out of the settlement. The class settlement also provided for the distribution to class merchants of 10 basis points of default interchange across all credit rate categories for a period of eight consecutive months. The district court granted final approval of the settlement, which was appealed to the United States Court of Appeals for the Second Circuit by settlement objector merchants. Other merchants opted out of the settlement and are pursuing several individual actions. On June 30, 2016, the Second Circuit vacated the settlement agreement and reversed and remanded the consolidated action to the United States District Court for the Eastern District of New York for further proceedings. On November 23, 2016, prior class counsel filed a petition to the United States Supreme Court, seeking review of the reversal of the settlement by the Second Circuit, and the Supreme Court denied the petition on March 27, 2017. On November 30, 2016, the district court appointed lead class counsel for a damages class and an equitable relief class. The

parties have entered into a settlement agreement to resolve the money damages class claims pursuant to which defendants will pay a total of approximately \$6.2 billion, which includes approximately \$5.3 billion of funds remaining from the 2012 settlement and \$900 million in additional funding. The Company's allocated responsibility for the additional funding is approximately \$94.5 million. The court granted final approval of the settlement on December 13, 2019, which was appealed to the United States Court of Appeals for the Second Circuit by settlement objector merchants. Several of the opt-out and direct action litigations have been settled while others remain pending. Discovery is proceeding in the opt-out litigations and the equitable relief class case.

LOW INCOME HOUSING TAX CREDITS Federal government agencies have undertaken formal or informal inquiries or investigations regarding the manner in which the Company purchased, and negotiated the purchase of, certain federal low income housing tax credits in connection with the financing of low income housing developments.

MOBILE DEPOSIT PATENT LITIGATION The Company is a defendant in two separate cases brought by United Services Automobile Association (USAA) in the United States District Court for the Eastern District of Texas alleging claims of patent infringement regarding mobile deposit capture technology patents held by USAA. Trial in the first case commenced on October 30, 2019, and resulted in a \$200 million verdict against the Company. Trial in the second case commenced on January 6, 2020, and resulted in a \$102.7 million verdict against the Company. The Company has filed post-trial motions to, among other things, vacate the verdicts, and USAA has filed post-trial motions seeking future royalty payments and damages for willful infringement.

MORTGAGE LOAN MODIFICATION LITIGATION Plaintiffs representing a putative class of mortgage borrowers have filed separate putative class actions, *Hernandez v. Wells Fargo, et al.*, *Coordes v. Wells Fargo, et al.*, *Ryder v. Wells Fargo, Liguori v. Wells Fargo*, and *Dore v. Wells Fargo*, against Wells Fargo Bank, N.A., in the United States District Court for the Northern District of California, the United States District Court for the District of Washington, the United States District Court for the Southern District of Ohio, the United States District Court for the Southern District of New York, and the United States District Court for the Western District of Pennsylvania, respectively. Plaintiffs allege that Wells Fargo improperly denied mortgage loan modifications or repayment plans to customers in the foreclosure process due to the overstatement of foreclosure attorneys' fees that were included for purposes of determining whether a customer in the foreclosure process qualified for a mortgage loan modification or repayment plan.

MORTGAGE-RELATED REGULATORY INVESTIGATIONS Federal and state government agencies, including the Department of Justice, have been investigating or examining certain mortgage related activities of Wells Fargo and predecessor institutions. Wells Fargo, for itself and for predecessor institutions, has responded, or continues to respond, to requests from these agencies seeking information regarding the origination, underwriting, and securitization of residential mortgages, including sub-prime mortgages. These agencies have advanced theories of purported liability with respect to certain of these activities. An agreement, pursuant to which the Company paid \$2.09 billion, was reached in August 2018 to resolve the Department of Justice investigation, which related to certain 2005-2007 residential mortgage-backed securities activities. In

Note 17: Legal Actions (continued)

addition, the Company reached an agreement with the Attorney General of the State of Illinois in November 2018 pursuant to which the Company paid \$17 million in restitution to certain Illinois state pension funds to resolve a claim relating to certain residential mortgage-backed securities activities. Other financial institutions have entered into similar settlements with these agencies, the nature of which related to the specific activities of those financial institutions, including the imposition of significant financial penalties and remedial actions.

OFAC RELATED INVESTIGATION The Company has self-identified an issue whereby certain foreign banks utilized a Wells Fargo software-based solution to conduct import/export trade-related financing transactions with countries and entities prohibited by the Office of Foreign Assets Control (OFAC) of the United States Department of the Treasury. We do not believe any funds related to these transactions flowed through accounts at Wells Fargo as a result of the aforementioned conduct. The Company has made voluntary self-disclosures to OFAC and is cooperating with an inquiry from the Department of Justice.

ORDER OF POSTING LITIGATION Plaintiffs filed a series of putative class actions against Wachovia Bank, N.A., and Wells Fargo Bank, N.A., as well as many other banks, challenging the “high to low” order in which the banks post debit card transactions to consumer deposit accounts. Most of these actions were consolidated in multi-district litigation proceedings (MDL proceedings) in the United States District Court for the Southern District of Florida. The court in the MDL proceedings has certified a class of putative plaintiffs, and Wells Fargo moved to compel arbitration of the claims of unnamed class members. The court denied the motions to compel arbitration in October 2016, and Wells Fargo appealed this decision to the United States Court of Appeals for the Eleventh Circuit. In May 2018, the Eleventh Circuit ruled in Wells Fargo’s favor and found that Wells Fargo had not waived its arbitration rights and remanded the case to the district court for further proceedings. On September 26, 2019, the district court entered an order granting Wells Fargo’s motion and dismissed the claims of unnamed class members in favor of arbitration. Plaintiffs appealed this decision to the United States Court of Appeals for the Eleventh Circuit.

RETAIL SALES PRACTICES MATTERS A number of bodies or entities, including (a) federal, state, and local government agencies, including the Department of Justice, the United States Securities and Exchange Commission (SEC), and the United States Department of Labor, (b) state attorneys general, including the New York Attorney General, and (c) Congressional committees, have undertaken formal or informal inquiries, investigations, or examinations arising out of certain retail sales practices of the Company that were the subject of settlements with the CFPB, the OCC, and the Office of the Los Angeles City Attorney announced by the Company on September 8, 2016. These matters are at varying stages. The Company has responded, and continues to respond, to requests from a number of the foregoing. In October 2018, the Company entered into an agreement to resolve the New York Attorney General’s investigation pursuant to which the Company paid \$65 million to the State of New York. In December 2018, the Company entered into an agreement with all 50 state Attorneys General and the District of Columbia to resolve an investigation into the Company’s retail sales practices, CPI and GAP, and mortgage interest rate lock matters, pursuant to which the Company paid \$575 million. On February 21, 2020, the Company entered into an

agreement with the Department of Justice to resolve the Department of Justice’s criminal investigation into the Company’s retail sales practices, as well as a separate agreement to resolve the Department of Justice’s civil investigation. As part of the Department of Justice criminal settlement, no charges will be filed against the Company provided the Company abides by all the terms of the agreement. The Department of Justice criminal settlement also includes the Company’s agreement that the facts set forth in the settlement document constitute sufficient facts for the finding of criminal violations of statutes regarding bank records and personal information. On February 21, 2020, the Company also entered into an order to resolve the SEC’s investigation arising out of the Company’s retail sales practices. The SEC order contains a finding, to which the Company consented, that the facts set forth include violations of Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5 thereunder. As part of the resolution of the Department of Justice and SEC investigations, the Company has agreed to make payments totaling \$3.0 billion. In addition, as part of the settlements and included in the \$3.0 billion amount, the Company has agreed to the creation of a \$500 million Fair Fund for the benefit of investors who were harmed by the conduct covered in the SEC settlement.

In addition, a number of lawsuits have been filed by non-governmental parties seeking damages or other remedies related to these retail sales practices. First, various class plaintiffs, purporting to represent consumers who allege that they received products or services without their authorization or consent, have brought separate putative class actions against the Company in the United States District Court for the Northern District of California and various other jurisdictions. In April 2017, the Company entered into a settlement agreement in the first-filed action, *Jabbari v. Wells Fargo Bank, N.A.*, pursuant to which the Company will pay \$142 million to resolve claims regarding certain products or services provided without authorization or consent for the time period May 1, 2002 to April 20, 2017. The district court issued an order granting final approval of the settlement on June 14, 2018. Several appeals of the district court’s order granting final approval of the settlement have been filed with the United States Court of Appeals for the Ninth Circuit. Second, Wells Fargo shareholders brought a consolidated securities fraud class action in the United States District Court for the Northern District of California alleging certain misstatements and omissions in the Company’s disclosures related to sales practices matters. The Company entered into a settlement agreement to resolve this matter pursuant to which the Company paid \$480 million. The district court issued an order granting final approval of the settlement on December 20, 2018. Third, Wells Fargo shareholders have brought numerous shareholder derivative lawsuits asserting breach of fiduciary duty claims against, among others, current and former directors and officers for their alleged involvement with and failure to detect and prevent sales practices issues. These actions are currently pending in the United States District Court for the Northern District of California and California state court as coordinated proceedings. An additional lawsuit, which asserts similar claims and is pending in Delaware state court, has been stayed. The parties have entered into settlement agreements to resolve the shareholder derivative lawsuits pursuant to which insurance carriers will pay the Company approximately \$240 million for alleged damage to the Company, and the Company will pay plaintiffs’ attorneys’ fees. The federal court granted preliminary approval of the settlement for its action and held a final approval hearing on August 1, 2019. The

state court granted final approval of the settlement for its action on January 15, 2020. Fourth, multiple employment litigation matters have been brought against Wells Fargo, including (a) a purported Employee Retirement Income Security Act (ERISA) class action in the United States District Court for the District of Minnesota on behalf of 401(k) plan participants; this action has been dismissed and is now on appeal; (b) a purported class action in the United States District Court for the Northern District of California on behalf of team members who allege that they protested sales practice misconduct and/or were terminated for not meeting sales goals; this action has been dismissed, and we have entered into a framework with plaintiffs' counsel to address individual claims that have been asserted; (c) various wage and hour class actions brought in federal and state court in California, New Jersey, and Pennsylvania on behalf of non-exempt branch based team members alleging that sales pressure resulted in uncompensated overtime; these actions have been settled; and (d) multiple single-plaintiff Sarbanes-Oxley Act complaints and state law whistleblower actions filed with the United States Department of Labor or in various state courts alleging adverse employment actions for raising sales practice misconduct issues.

RMBS TRUSTEE LITIGATION In November 2014, a group of institutional investors (Institutional Investor Plaintiffs), including funds affiliated with BlackRock, Inc., filed a putative class action in the United States District Court for the Southern District of New York against Wells Fargo Bank, N.A., alleging claims against the Company in its capacity as trustee for a number of residential mortgage-backed securities (RMBS) trusts (Federal Court Complaint). Similar complaints have been filed against other trustees in various courts, including in the Southern District of New York, in New York state court, and in other states, by RMBS investors. The Federal Court Complaint alleged that Wells Fargo Bank, N.A., as trustee, caused losses to investors and asserted causes of action based upon, among other things, the trustee's alleged failure to notify and enforce repurchase obligations of mortgage loan sellers for purported breaches of representations and warranties, notify investors of alleged events of default, and abide by appropriate standards of care following alleged events of default. Plaintiffs sought money damages in an unspecified amount, reimbursement of expenses, and equitable relief. In December 2014 and December 2015, certain other investors filed additional complaints alleging similar claims against Wells Fargo Bank, N.A., in the Southern District of New York (Related Federal Cases). In January 2016, the Southern District of New York entered an order in connection with the Federal Court Complaint dismissing claims related to certain of the trusts at issue (Dismissed Trusts). The Company's subsequent motion to dismiss the Federal Court Complaint and the complaints for the Related Federal Cases was granted in part and denied in part in March 2017. In May 2017, the Company filed third-party complaints against certain investment advisors affiliated with the Institutional Investor Plaintiffs seeking contribution with respect to claims alleged in the Federal Court Complaint (Third-Party Claims).

In December 2016, the Institutional Investor Plaintiffs filed a new putative class action complaint in New York state court in respect of 261 RMBS trusts, including the Dismissed Trusts, for which Wells Fargo Bank, N.A., serves or served as trustee (State Court Action). A complaint raising similar allegations to those in the Federal Court Complaint was filed in May 2016 in New York state court by IKB International and IKB Deutsche Industriebank (IKB Action).

In July 2017, certain of the plaintiffs from the State Court Action filed a civil complaint relating to Wells Fargo Bank,

N.A.'s setting aside reserves for legal fees and expenses in connection with the liquidation of eleven RMBS trusts at issue in the State Court Action (Declaratory Judgment Action). The complaint sought, among other relief, declarations that the Company is not entitled to indemnification, the advancement of funds, or the taking of reserves from trust funds for legal fees and expenses it incurs in defending the claims in the State Court Action.

In May 2019, the New York state court approved a settlement agreement among the Institutional Investor Plaintiffs and the Company pursuant to which, among other terms, the Company paid \$43 million to resolve the Federal Court Complaint and the State Court Action. The settlement also resolved the Third Party Claims and the Declaratory Judgment Action. The settlement did not affect the Related Federal Cases or the IKB Action, which remain pending.

SEMINOLE TRIBE TRUSTEE LITIGATION The Seminole Tribe of Florida filed a complaint in Florida state court alleging that Wells Fargo, as trustee, charged excess fees in connection with the administration of a minor's trust and failed to invest the assets of the trust prudently. The complaint was later amended to include three individual current and former beneficiaries as plaintiffs and to remove the Tribe as a party to the case. In December 2016, the Company filed a motion to dismiss the amended complaint on the grounds that the Tribe is a necessary party and that the individual beneficiaries lack standing to bring claims. The motion was denied in June 2018. Trial is scheduled for April 2020.

WHOLESALE BANKING CONSENT ORDER INVESTIGATION On November 19, 2015, the Company entered into a consent order with the OCC, pursuant to which the Wholesale Banking group was required to implement customer due diligence standards that include collection of current beneficial ownership information for certain business customers. The Company is responding to inquiries from various federal government agencies regarding potentially inappropriate conduct in connection with the collection of beneficial ownership information.

OUTLOOK As described above, the Company establishes accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. The high end of the range of reasonably possible potential losses in excess of the Company's accrual for probable and estimable losses was approximately \$2.6 billion as of December 31, 2019. The outcomes of legal actions are unpredictable and subject to significant uncertainties, and it is inherently difficult to determine whether any loss is probable or even possible. It is also inherently difficult to estimate the amount of any loss and there may be matters for which a loss is probable or reasonably possible but not currently estimable. Accordingly, actual losses may be in excess of the established accrual or the range of reasonably possible loss. Wells Fargo is unable to determine whether the ultimate resolution of the retail sales practices matters will have a material adverse effect on its consolidated financial condition. Based on information currently available, advice of counsel, available insurance coverage, and established reserves, Wells Fargo believes that the eventual outcome of other actions against Wells Fargo and/or its subsidiaries will not, individually or in the aggregate, have a material adverse effect on Wells Fargo's consolidated financial condition. However, it is possible that the ultimate resolution of a matter, if unfavorable, may be material to Wells Fargo's results of operations for any particular period.

Note 18: Derivatives

We use derivatives to manage exposure to market risk, including interest rate risk, credit risk and foreign currency risk, and to assist customers with their risk management objectives. We designate certain derivatives as hedging instruments in qualifying hedge accounting relationships (fair value or cash flow hedges). Our remaining derivatives consist of economic hedges that do not qualify for hedge accounting and derivatives held for customer accommodation trading or other purposes.

Risk management derivatives

Our asset/liability management approach to interest rate, foreign currency and certain other risks includes the use of derivatives, which are typically designated as fair value or cash flow hedges, or economic hedges. We use derivatives to help minimize significant, unplanned fluctuations in earnings, fair values of assets and liabilities, and cash flows caused by interest rate, foreign currency and other market risk volatility. This approach involves modifying the repricing characteristics of certain assets and liabilities so that changes in interest rates, foreign currency and other exposures, which may cause the hedged assets and liabilities to gain or lose fair value, do not have a significant adverse effect on the net interest margin, cash flows and earnings. In a fair value or economic hedge, the effect of change in fair value will generally be offset by the unrealized gain or loss on the derivatives linked to the hedged assets and liabilities. In a cash flow hedge, where we manage the variability of cash payments due to interest rate or foreign currency fluctuations by the effective use of derivatives linked to hedged assets and liabilities, the hedged asset or liability is not adjusted and the unrealized gain or loss on the derivative is recorded in other comprehensive income.

Customer accommodation trading

We also use various derivatives, including interest rate, commodity, equity, credit and foreign exchange contracts, as an accommodation to our customers as part of our trading businesses. These derivative transactions, which involve engaging in market-making activities or acting as an intermediary, are conducted in an effort to help customers manage their market risks. We usually offset our exposure from such derivatives by entering into other financial contracts, such as separate derivative or security transactions. These customer accommodations and any offsetting derivatives are treated as customer accommodation trading and other derivatives in our disclosures. Additionally, embedded derivatives that are required to be accounted for separately from their host contracts are included in the customer accommodation trading and other derivatives disclosures, as applicable.

We mention derivative instruments within several other Notes in this Report. For more information on Derivatives, refer to the following areas:

- Note 1 – Summary of Significant Accounting Policies
- Note 4 – Trading Activities
- Note 8 – Equity Securities
- Note 10 – Securitizations and Variable Interest Entities
- Note 11 – Mortgage Banking Activities
- Note 15 – Long-Term Debt
- Note 16 – Guarantees, Pledged Assets and Collateral, and Other Commitments
- Note 19 – Fair Values of Assets and Liabilities
- Note 24 – Income Taxes
- Note 26 – Other Comprehensive Income
- Note 28 – Parent-Only Financial Statements

Table 18.1 presents the total notional or contractual amounts and fair values for our derivatives. Derivative transactions can be measured in terms of the notional amount, but this amount is not recorded on the balance sheet and is not,

when viewed in isolation, a meaningful measure of the risk profile of the instruments. The notional amount is generally not exchanged, but is used only as the basis on which interest and other payments are determined.

Table 18.1: Notional or Contractual Amounts and Fair Values of Derivatives

(in millions)	December 31, 2019			December 31, 2018		
	Notional or contractual amount	Fair value		Notional or contractual amount	Fair value	
		Derivative assets	Derivative liabilities		Derivative assets	Derivative liabilities
Derivatives designated as hedging instruments						
Interest rate contracts	\$ 182,789	2,595	1,237	177,511	2,237	636
Foreign exchange contracts	32,386	341	1,170	34,176	573	1,376
Total derivatives designated as qualifying hedging instruments		2,936	2,407		2,810	2,012
Derivatives not designated as hedging instruments						
Economic hedges:						
Interest rate contracts	235,810	207	160	173,215	849	369
Equity contracts	19,263	1,126	224	13,920	1,362	79
Foreign exchange contracts	26,595	118	286	19,521	225	80
Credit contracts - protection purchased	1,400	27	—	100	27	—
Subtotal		1,478	670		2,463	528
Customer accommodation trading and other derivatives:						
Interest rate contracts	11,117,542	21,245	17,969	9,162,821	15,349	15,303
Commodity contracts	79,737	1,421	1,770	66,173	1,588	2,336
Equity contracts	272,145	7,410	10,240	217,890	6,183	5,931
Foreign exchange contracts	364,469	4,755	4,791	364,982	5,916	5,657
Credit contracts - protection sold	12,215	12	65	11,741	76	182
Credit contracts - protection purchased	24,030	69	18	20,880	175	98
Subtotal		34,912	34,853		29,287	29,507
Total derivatives not designated as hedging instruments		36,390	35,523		31,750	30,035
Total derivatives before netting		39,326	37,930		34,560	32,047
Netting		(25,123)	(28,851)		(23,790)	(23,548)
Total	\$	14,203	9,079		10,770	8,499

Note 18: Derivatives (continued)

Table 18.2 provides information on the gross fair values of derivative assets and liabilities, the balance sheet netting adjustments and the resulting net fair value amount recorded on our balance sheet, as well as the non-cash collateral associated with such arrangements. We execute substantially all of our derivative transactions under master netting arrangements and reflect all derivative balances and related cash collateral subject to enforceable master netting arrangements on a net basis within the balance sheet. The “Gross amounts recognized” column in the following table includes \$33.7 billion and \$33.5 billion of gross derivative assets and liabilities, respectively, at December 31, 2019, and \$30.9 billion and \$28.4 billion, respectively, at December 31, 2018, with counterparties subject to enforceable master netting arrangements that are eligible for balance sheet netting adjustments. The majority of these amounts are interest rate contracts executed in over-the-counter (OTC) markets. The remaining gross derivative assets and liabilities of \$5.6 billion and \$4.4 billion, respectively, at December 31, 2019, and \$3.7 billion and \$3.6 billion, respectively, at December 31, 2018, include those with counterparties subject to master netting arrangements for which we have not assessed the enforceability because they are with counterparties where we do not currently have positions to offset, those subject to master netting arrangements where we have not been able to confirm the enforceability and those not subject to master netting arrangements. As such, we do not net derivative balances or collateral within the balance sheet for these counterparties. Cash collateral receivables and payables that have not been offset against our derivatives were \$6.3 billion and \$1.4 billion, respectively, at December 31, 2019, and \$4.8 billion and \$1.4 billion, respectively, at December 31, 2018.

We determine the balance sheet netting adjustments based on the terms specified within each master netting arrangement. We disclose the balance sheet netting amounts within the column titled “Gross amounts offset in consolidated balance sheet.” Balance sheet netting adjustments are determined at the counterparty level for which there may be multiple contract types. For disclosure purposes, we allocate these netting adjustments to the contract type for each counterparty proportionally based upon the “Gross amounts recognized” by counterparty. As a result, the net amounts disclosed by contract type may not represent the actual exposure upon settlement of the contracts.

We do not net non-cash collateral that we receive and pledge on the balance sheet. For disclosure purposes, we present the fair value of this non-cash collateral in the column titled “Gross amounts not offset in consolidated balance sheet (Disclosure-only netting)” within the table. We determine and allocate the Disclosure-only netting amounts in the same manner as balance sheet netting amounts.

The “Net amounts” column within Table 18.2 represents the aggregate of our net exposure to each counterparty after considering the balance sheet and Disclosure-only netting adjustments. We manage derivative exposure by monitoring the credit risk associated with each counterparty using counterparty specific credit risk limits, using master netting arrangements and obtaining collateral. Derivative contracts executed in OTC markets include bilateral contractual arrangements that are not cleared through a central clearing organization but are typically subject to enforceable master netting arrangements. Other derivative contracts that are settled through a central clearing organization whether OTC or exchange-traded, are excluded from that percentage. In addition to the netting amounts included in the table, we also have balance sheet netting related to resale and repurchase agreements that are disclosed within Note 16 (Guarantees, Pledged Assets and Collateral, and Other Commitments).

Table 18.2: Gross Fair Values of Derivative Assets and Liabilities

(in millions)	Gross amounts recognized	Gross amounts offset in consolidated balance sheet (1)	Net amounts in consolidated balance sheet	Gross amounts not offset in consolidated balance sheet (Disclosure-only netting)	Net amounts	Percent exchanged in over-the-counter market
December 31, 2019						
Derivative assets						
Interest rate contracts	\$ 24,047	(14,878)	9,169	(445)	8,724	95%
Commodity contracts	1,421	(888)	533	(2)	531	80
Equity contracts	8,536	(5,570)	2,966	(69)	2,897	65
Foreign exchange contracts	5,214	(3,722)	1,492	(22)	1,470	100
Credit contracts-protection sold	12	(9)	3	—	3	84
Credit contracts-protection purchased	96	(56)	40	(1)	39	97
Total derivative assets	\$ 39,326	(25,123)	14,203	(539)	13,664	
Derivative liabilities						
Interest rate contracts	\$ 19,366	(16,595)	2,771	(545)	2,226	94%
Commodity contracts	1,770	(677)	1,093	(2)	1,091	82
Equity contracts	10,464	(6,647)	3,817	(319)	3,498	81
Foreign exchange contracts	6,247	(4,866)	1,381	(169)	1,212	100
Credit contracts-protection sold	65	(60)	5	(3)	2	98
Credit contracts-protection purchased	18	(6)	12	—	12	93
Total derivative liabilities	\$ 37,930	(28,851)	9,079	(1,038)	8,041	
December 31, 2018						
Derivative assets						
Interest rate contracts	\$ 18,435	(12,029)	6,406	(80)	6,326	90%
Commodity contracts	1,588	(849)	739	(4)	735	57
Equity contracts	7,545	(5,318)	2,227	(755)	1,472	78
Foreign exchange contracts	6,714	(5,355)	1,359	(35)	1,324	100
Credit contracts-protection sold	76	(73)	3	—	3	12
Credit contracts-protection purchased	202	(166)	36	(1)	35	78
Total derivative assets	\$ 34,560	(23,790)	10,770	(875)	9,895	
Derivative liabilities						
Interest rate contracts	\$ 16,308	(13,152)	3,156	(567)	2,589	92%
Commodity contracts	2,336	(727)	1,609	(8)	1,601	85
Equity contracts	6,010	(3,877)	2,133	(110)	2,023	75
Foreign exchange contracts	7,113	(5,522)	1,591	(188)	1,403	100
Credit contracts-protection sold	182	(180)	2	(2)	—	67
Credit contracts-protection purchased	98	(90)	8	—	8	11
Total derivative liabilities	\$ 32,047	(23,548)	8,499	(875)	7,624	

(1) Represents amounts with counterparties subject to enforceable master netting arrangements that have been offset in the consolidated balance sheet, including related cash collateral and portfolio level counterparty valuation adjustments. Counterparty valuation adjustments related to derivative assets were \$231 million and \$353 million and debit valuation adjustments related to derivative liabilities were \$100 million and \$152 million as of December 31, 2019 and 2018, respectively. Cash collateral totaled \$2.9 billion and \$6.8 billion, netted against derivative assets and liabilities, respectively, at December 31, 2019, and \$3.7 billion and \$3.6 billion, respectively, at December 31, 2018.

Note 18: Derivatives (continued)

Fair Value and Cash Flow Hedges

For fair value hedges, we use interest rate swaps to convert certain of our fixed-rate long-term debt and time certificates of deposit to floating rates to hedge our exposure to interest rate risk. We also enter into cross-currency swaps, cross-currency interest rate swaps and forward contracts to hedge our exposure to foreign currency risk and interest rate risk associated with the issuance of non-U.S. dollar denominated long-term debt. In addition, we use interest rate swaps, cross-currency swaps, cross-currency interest rate swaps and forward contracts to hedge against changes in fair value of certain investments in available-for-sale debt securities due to changes in interest rates, foreign currency rates, or both. We also use interest rate swaps to hedge against changes in fair value for certain mortgage loans held for sale. For certain fair value hedges of foreign currency risk, changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income. See Note 26 (Other Comprehensive Income) for the amounts recognized in other comprehensive income.

For cash flow hedges, we use interest rate swaps to hedge the variability in interest payments received on certain floating-rate commercial loans and paid on certain floating-rate debt due to changes in the contractually specified interest rate. We also use cross-currency swaps to hedge variability in interest payments on fixed-rate foreign currency-denominated long-term debt due to changes in foreign exchange rates.

We estimate \$221 million pre-tax of deferred net losses related to cash flow hedges in OCI at December 31, 2019, will be reclassified into net interest income during the next twelve months. The deferred losses expected to be reclassified into net interest income are predominantly related to discontinued hedges of floating rate loans. For cash flow hedges as of December 31, 2019, we are hedging our foreign currency exposure to the variability of future cash flows for all forecasted transactions for a maximum of 11 years.

Table 18.3 and Table 18.4 show the net gains (losses) related to derivatives in fair value and cash flow hedging relationships, respectively.

Table 18.3: Gains (Losses) Recognized on Fair Value Hedging Relationships

(in millions)	Net interest income				Noninterest income	Total recorded in net income	Total recorded in OCI
	Debt securities	Mortgage loans held for sale	Deposits	Long-term debt	Other	Derivative gains (losses)	Derivative gains (losses)
Year Ended December 31, 2019							
Total amounts presented in the consolidated statement of income and other comprehensive income	\$ 14,955	813	(8,635)	(7,350)	3,181	N/A	275
Interest contracts							
Amounts related to interest settlements on derivatives	—	2	58	169	—	229	—
Recognized on derivatives	(2,082)	1	463	5,001	—	3,383	—
Recognized on hedged items	2,096	(7)	(442)	(4,910)	—	(3,263)	—
Total gains (losses) (pre-tax) on interest rate contracts	14	(4)	79	260	—	349	—
Foreign exchange contracts							
Amounts related to interest settlements on derivatives	35	—	—	(483)	—	(448)	—
Recognized on derivatives	(5)	—	—	308	(358)	(55)	(3)
Recognized on hedged items	6	—	—	(289)	350	67	—
Total gains (losses) (pre-tax) on foreign exchange contracts	36	—	—	(464)	(8)	(436)	(3)
Total gains (losses) (pre-tax) recognized on fair value hedges	\$ 50	(4)	79	(204)	(8)	(87)	(3)

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(in millions)	Net interest income				Noninterest income	Total recorded in net income	Total recorded in OCI
	Debt securities	Mortgage loans held for sale	Deposits	Long-term debt	Other	Derivative gains (losses)	Derivative gains (losses)
Year ended December 31, 2018							
Total amounts presented in the consolidated statement of income and other comprehensive income	\$ 14,406	777	(5,622)	(6,703)	2,473	N/A	(238)
Interest contracts							
Amounts related to interest settlements on derivatives	(187)	(3)	(41)	292	—	61	
Recognized on derivatives	845	15	27	(1,923)	—	(1,035)	—
Recognized on hedged items	(877)	(22)	(33)	1,843	—	910	
Total gains (losses) (pre-tax) on interest rate contracts	(219)	(10)	(47)	212	—	(64)	—
Foreign exchange contracts							
Amounts related to interest settlements on derivatives	33	—	—	(434)	—	(401)	
Recognized on derivatives	7	—	—	135	(1,204)	(1,062)	(254)
Recognized on hedged items	(1)	—	—	(82)	1,114	1,031	
Total gains (losses) (pre-tax) on foreign exchange contracts	39	—	—	(381)	(90)	(432)	(254)
Total gains (losses) (pre-tax) recognized on fair value hedges	\$ (180)	(10)	(47)	(169)	(90)	(496)	(254)
Year ended December 31, 2017							
Total amounts presented in the consolidated statement of income and other comprehensive income	\$ 12,946	786	(3,013)	(5,157)	1,603	N/A	(1,083)
Interest contracts							
Amounts related to interest settlements on derivatives	(469)	(5)	36	1,286	—	847	
Recognized on derivatives	(43)	(5)	(20)	(912)	—	(979)	—
Recognized on hedged items	(52)	(4)	36	938	—	917	
Total gains (losses) (pre-tax) on interest rate contracts	(564)	(14)	52	1,312	—	785	—
Foreign exchange contracts							
Amounts related to interest settlements on derivatives	14	—	—	(210)	—	(196)	
Recognized on derivatives	13	—	—	(230)	3,118	2,901	(253)
Recognized on hedged items	(10)	—	—	255	(2,855)	(2,610)	
Total gains (losses) (pre-tax) on foreign exchange contracts	17	—	—	(185)	263	95	(253)
Total gains (losses) (pre-tax) recognized on fair value hedges	\$ (547)	(14)	52	1,127	263	880	(253)

Note 18: Derivatives (continued)

Table 18.4: Gains (Losses) Recognized on Cash Flow Hedging Relationships

(in millions)	Net interest income		Total recorded in net income	Total recorded in OCI
	Loans	Long-term debt	Derivative gains (losses)	Derivative gains (losses)
Year Ended December 31, 2019				
Total amounts presented in the consolidated statement of income and other comprehensive income	\$ 44,146	(7,350)	N/A	275
Interest rate contracts:				
Realized gains (losses) (pre-tax) reclassified from OCI into net income	(291)	1	(290)	290
Net unrealized gains (losses) (pre-tax) recognized in OCI	N/A	N/A	N/A	—
Total gains (losses) (pre-tax) on interest rate contracts	(291)	1	(290)	290
Foreign exchange contracts:				
Realized gains (losses) (pre-tax) reclassified from OCI into net income	—	(9)	(9)	9
Net unrealized gains (losses) (pre-tax) recognized in OCI	N/A	N/A	N/A	(21)
Total gains (losses) (pre-tax) on foreign exchange contracts	—	(9)	(9)	(12)
Total gains (losses) (pre-tax) recognized on cash flow hedges	\$ (291)	(8)	(299)	278
Year ended December 31, 2018				
Total amounts presented in the consolidated statement of income and other comprehensive income	\$ 43,974	(6,703)	N/A	(238)
Interest rate contracts:				
Realized gains (losses) (pre-tax) reclassified from OCI into net income	(292)	1	(291)	291
Net unrealized gains (losses) (pre-tax) recognized in OCI	N/A	N/A	N/A	(266)
Total gains (losses) (pre-tax) on interest rate contracts	(292)	1	(291)	25
Foreign exchange contracts:				
Realized gains (losses) (pre-tax) reclassified from OCI into net income	—	(3)	(3)	3
Net unrealized gains (losses) (pre-tax) recognized in OCI	N/A	N/A	N/A	(12)
Total gains (losses) (pre-tax) on foreign exchange contracts	—	(3)	(3)	(9)
Total gains (losses) (pre-tax) recognized on cash flow hedges	\$ (292)	(2)	(294)	16
Year ended December 31, 2017				
Total amounts presented in the consolidated statement of income and other comprehensive income	\$ 41,388	(5,157)	N/A	(1,083)
Interest rate contracts:				
Realized gains (losses) (pre-tax) reclassified from OCI into net income	551	(8)	543	(543)
Net unrealized gains (losses) (pre-tax) recognized in OCI	N/A	N/A	N/A	(287)
Total gains (losses) (pre-tax) on interest rate contracts	551	(8)	543	(830)
Foreign exchange contracts:				
Realized gains (losses) (pre-tax) reclassified from OCI into net income	—	—	—	—
Net unrealized gains (losses) (pre-tax) recognized in OCI	N/A	N/A	N/A	—
Total gains (losses) (pre-tax) on foreign exchange contracts	—	—	—	—
Total gains (losses) (pre-tax) recognized on cash flow hedges	\$ 551	(8)	543	(830)

Table 18.5 shows the carrying amount and associated cumulative basis adjustment related to the application of hedge accounting that is included in the carrying amount of hedged assets and liabilities in fair value hedging relationships.

Table 18.5: Hedged Items in Fair Value Hedging Relationship

(in millions)	Hedged Items Currently Designated		Hedged Items No Longer Designated (1)	
	Carrying Amount of Assets/(Liabilities) (2)(4)	Hedge Accounting Basis Adjustment Assets/(Liabilities) (3)	Carrying Amount of Assets/(Liabilities) (4)	Hedge Accounting Basis Adjustment Assets/(Liabilities)
December 31, 2019				
Available-for-sale debt securities (5)	\$ 36,896	1,110	9,486	278
Mortgage loans held for sale	961	(12)	—	—
Deposits	(43,716)	(324)	—	—
Long-term debt	(127,423)	(5,827)	(25,750)	173
December 31, 2018				
Available-for-sale debt securities (5)	\$ 37,857	(157)	4,938	238
Mortgage loans held for sale	448	7	—	—
Deposits	(56,535)	115	—	—
Long-term debt	(104,341)	(742)	(25,539)	366

- (1) Represents hedged items no longer designated in qualifying fair value hedging relationships for which an associated basis adjustment exists at the balance sheet date.
(2) Does not include the carrying amount of hedged items where only foreign currency risk is the designated hedged risk. The carrying amount excluded for debt securities is \$1.2 billion and for long-term debt is \$(5.2) billion as of December 31, 2019, and \$1.6 billion for debt securities and \$(6.3) billion for long-term debt as of December 31, 2018.
(3) The balance includes \$790 million and \$109 million of debt securities and long-term debt cumulative basis adjustments as of December 31, 2019, respectively, and \$1.4 billion and \$66 million of debt securities and long-term debt cumulative basis adjustments as of December 31, 2018, respectively, on terminated hedges whereby the hedged items have subsequently been re-designated into existing hedges.
(4) Represents the full carrying amount of the hedged asset or liability item as of the balance sheet date, except for circumstances in which only a portion of the asset or liability was designated as the hedged item in which case only the portion designated is presented.
(5) Carrying amount represents the amortized cost.

Derivatives Not Designated as Hedging Instruments

Derivatives not designated as hedging instruments include economic hedges and derivatives entered into for customer accommodation trading purposes.

We use economic hedge derivatives to manage our exposure to interest rate risk, equity price risk, foreign currency risk, and credit risk. We also use economic hedge derivatives to mitigate the periodic earnings volatility caused by mismatches between the changes in fair value of the hedged item and hedging instrument recognized on our fair value accounting hedges.

Mortgage Banking Activities

We use economic hedge derivatives in our mortgage banking business to hedge the risk of changes in the fair value of (1) certain residential MSRs measured at fair value, (2) residential MLHFS, (3) derivative loan commitments, and (4) other interests held. The types of derivatives used include swaps, swaptions, constant maturity mortgages, forwards, Eurodollar and Treasury futures and options contracts. Loan commitments for mortgage loans that we intend to sell are considered derivatives. Residential MSRs, derivative loan commitments, certain residential MLHFS, and our economic hedge derivatives are carried at fair value with changes in fair value included in mortgage banking noninterest income. See Note 11 (Mortgage Banking Activities) for additional information on this economic hedging activity and mortgage banking income.

Customer Accommodation Trading and Other

For customer accommodation trading purposes, we use swaps, futures, forwards, spots and options to assist our customers in managing their own risks, including interest rate, commodity, equity, foreign exchange, and credit contracts. These derivatives are not linked to specific assets and liabilities on the balance sheet or to forecasted transactions in an accounting hedge relationship and, therefore, do not qualify for hedge accounting. We also enter into derivatives for risk management that do not otherwise qualify for hedge accounting. They are carried at fair value with changes in fair value recorded in noninterest income.

Customer accommodation trading and other derivatives also include embedded derivatives that are required to be accounted for separately from their host contract. We periodically issue hybrid long-term notes and CDs where the performance of the hybrid instrument note is linked to an equity, commodity or currency index, or basket of such indices. These notes contain explicit terms that affect some or all of the cash flows or the value of the note in a manner similar to a derivative instrument and therefore are considered to contain an “embedded” derivative instrument. The indices on which the performance of the hybrid instrument is calculated are not clearly and closely related to the host debt instrument. The “embedded” derivative is separated from the host contract and accounted for as a derivative. Additionally, we may invest in hybrid instruments that contain embedded derivatives, such as credit derivatives, that are not clearly and closely related to the host contract. In such instances, we either elect fair value option for the hybrid instrument or separate the embedded derivative from the host contract and account for the host contract and derivative separately.

Note 18: Derivatives (continued)

Table 18.6 shows the net gains (losses), recognized by income statement lines, related to derivatives not designated as hedging instruments.

Table 18.6: Gains (Losses) on Derivatives Not Designated as Hedging Instruments

(in millions)	Noninterest income				Total
	Mortgage banking	Net gains (losses) from equity securities	Net gains (losses) from trading activities	Other	
Year ended December 31, 2019					
Net gains (losses) recognized on economic hedges derivatives:					
Interest contracts (1)	\$ 2,177	—	—	1	2,178
Equity contracts	—	(2,120)	—	(2)	(2,122)
Foreign exchange contracts	—	—	—	(77)	(77)
Credit contracts	—	—	—	(5)	(5)
Subtotal	2,177	(2,120)	—	(83)	(26)
Net gains (losses) recognized on customer accommodation trading and other derivatives:					
Interest contracts	418	—	(95)	—	323
Commodity contracts	—	—	164	—	164
Equity contracts	—	—	(4,863)	(484)	(5,347)
Foreign exchange contracts	—	—	47	—	47
Credit contracts	—	—	(120)	—	(120)
Subtotal	418	—	(4,867)	(484)	(4,933)
Net gains (losses) recognized related to derivatives not designated as hedging instruments	\$ 2,595	(2,120)	(4,867)	(567)	(4,959)

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(in millions)	Noninterest income				Total
	Mortgage banking	Net gains (losses) from equity securities	Net gains (losses) from trading activities	Other	
Year ended December 31, 2018					
Net gains (losses) recognized on economic hedges derivatives:					
Interest contracts (1)	\$ (215)	—	—	(15)	(230)
Equity contracts	—	(408)	—	4	(404)
Foreign exchange contracts	—	—	—	669	669
Credit contracts	—	—	—	—	—
Subtotal	(215)	(408)	—	658	35
Net gains (losses) recognized on customer accommodation trading and other derivatives:					
Interest contracts	(352)	—	446	—	94
Commodity contracts	—	—	83	—	83
Equity contracts	—	—	4,499	(403)	4,096
Foreign exchange contracts	—	—	638	—	638
Credit contracts	—	—	1	—	1
Subtotal	(352)	—	5,667	(403)	4,912
Net gains (losses) recognized related to derivatives not designated as hedging instruments	\$ (567)	(408)	5,667	255	4,947
Year ended December 31, 2017					
Net gains (losses) recognized on economic hedges derivatives:					
Interest contracts (1)	\$ 448	—	—	(75)	373
Equity contracts	—	(1,483)	—	17	(1,466)
Foreign exchange contracts	—	—	—	(866)	(866)
Credit contracts	—	—	—	5	5
Subtotal	448	(1,483)	—	(919)	(1,954)
Net gains (losses) recognized on customer accommodation trading and other derivatives:					
Interest contracts	614	—	160	—	774
Commodity contracts	—	—	178	—	178
Equity contracts	—	—	(3,932)	1	(3,931)
Foreign exchange contracts	—	—	638	—	638
Credit contracts	—	—	(81)	—	(81)
Subtotal	614	—	(3,037)	1	(2,422)
Net gains (losses) recognized related to derivatives not designated as hedging instruments	\$ 1,062	(1,483)	(3,037)	(918)	(4,376)

(1) Mortgage banking amounts for the years ended December 31, 2019, 2018 and 2017, are comprised of gains (losses) of \$2.3 billion, \$(1.1) billion and \$413 million, respectively, related to derivatives used as economic hedges of MSR's measured at fair value offset by gains (losses) of \$(141) million, \$857 million and \$35 million, respectively, related to derivatives used as economic hedges of mortgage loans held for sale and derivative loan commitments.

Credit Derivatives

Credit derivative contracts are arrangements whose value is derived from the transfer of credit risk of a reference asset or entity from one party (the purchaser of credit protection) to another party (the seller of credit protection). We use credit derivatives to assist customers with their risk management objectives. We may also use credit derivatives in structured product transactions or liquidity agreements written to special purpose vehicles. The maximum exposure of sold credit derivatives is managed through purchased credit derivatives and similar products in order to achieve our desired credit risk profile. This credit risk management provides an ability to recover a significant portion of any amounts that would be paid under the sold credit derivatives. We would be required to perform under the sold credit derivatives in the event of default by the referenced obligors. Events of default include events such as bankruptcy, capital restructuring or lack of principal and/or interest payment. In certain cases, other triggers may exist, such

as the credit downgrade of the referenced obligors or the inability of the special purpose vehicle for which we have provided liquidity to obtain funding.

Table 18.7 provides details of sold and purchased credit derivatives.

Note 18: Derivatives (continued)

Table 18.7: Sold and Purchased Credit Derivatives

(in millions)	Notional amount								Range of maturities
	Fair value asset	Fair value liability	Protection sold (A)	Protection sold - non-investment grade	Protection purchased with identical underlyings (B)	Net protection sold (A)-(B)	Other protection purchased		
December 31, 2019									
Credit default swaps on:									
Corporate bonds	\$ 8	1	2,855	707	1,885	970	2,447	2020 - 2029	
Structured products	—	25	74	69	63	11	111	2022 - 2047	
Credit protection on:									
Default swap index	1	—	2,542	120	550	1,992	8,105	2020 - 2029	
Commercial mortgage-backed securities index	3	26	322	67	296	26	50	2047 - 2058	
Asset-backed securities index	—	8	41	41	41	—	1	2045 - 2046	
Other	—	5	6,381	5,738	—	6,381	11,881	2020 - 2049	
Total credit derivatives	\$ 12	65	12,215	6,742	2,835	9,380	22,595		
December 31, 2018									
Credit default swaps on:									
Corporate bonds	\$ 38	59	2,037	441	1,374	663	1,460	2019 - 2027	
Structured products	—	62	133	128	121	12	113	2022 - 2047	
Credit protection on:									
Default swap index	37	1	3,618	582	1,998	1,620	2,896	2019 - 2028	
Commercial mortgage-backed securities index	1	49	389	109	363	26	51	2047 - 2058	
Asset-backed securities index	—	9	42	42	42	—	1	2045 - 2046	
Other	—	2	5,522	5,327	—	5,522	12,561	2018 - 2048	
Total credit derivatives	\$ 76	182	11,741	6,629	3,898	7,843	17,082		

Protection sold represents the estimated maximum exposure to loss that would be incurred under an assumed hypothetical circumstance, where the value of our interests and any associated collateral declines to zero, without any consideration of recovery or offset from any economic hedges. We believe this hypothetical circumstance to be an extremely remote possibility and accordingly, this required disclosure is not an indication of expected loss. The amounts under non-investment grade represent the notional amounts of those credit derivatives on which we have a higher risk of being required to perform under the terms of the credit derivative and are a function of the underlying assets.

We consider the risk of performance to be high if the underlying assets under the credit derivative have an external rating that is below investment grade or an internal credit default grade that is equivalent thereto. We believe the net protection sold, which is representative of the net notional amount of protection sold and purchased with identical underlyings, in combination with other protection purchased, is more representative of our exposure to loss than either non-investment grade or protection sold. Other protection purchased represents additional protection, which may offset the exposure to loss for protection sold, that was not purchased with an identical underlying of the protection sold.

Credit-Risk Contingent Features

Certain of our derivative contracts contain provisions whereby if the credit rating of our debt were to be downgraded by certain major credit rating agencies, the counterparty could demand additional collateral or require termination or replacement of derivative instruments in a net liability position. Table 18.8 illustrates our exposure to such derivatives with credit-risk contingent features, collateral we have posted, and the additional collateral we would be required to post if the credit rating of our debt was downgraded below investment grade.

Table 18.8: Credit-Risk Contingent Features

(in billions)	Dec 31, 2019	Dec 31, 2018
Net derivative liabilities with credit-risk contingent features	\$ 10.4	7.4
Collateral posted	9.1	5.6
Additional collateral to be posted upon a below investment grade credit rating (1)	1.3	1.8

(1) Any credit rating below investment grade requires us to post the maximum amount of collateral

Note 19: Fair Values of Assets and Liabilities

We use fair value measurements to record fair value adjustments to certain assets and liabilities and to determine fair value disclosures. Assets and liabilities recorded at fair value on a recurring basis are presented in Table 19.2 in this Note. From time to time, we may be required to record fair value adjustments on a nonrecurring basis. These nonrecurring fair value adjustments typically involve application of LOCOM accounting, write-downs of individual assets or application of the measurement alternative for nonmarketable equity securities. Assets recorded on a nonrecurring basis are presented in Table 19.11 in this Note. Table 19.17 includes estimates of fair value for financial instruments that are not recorded at fair value.

FAIR VALUE HIERARCHY We classify our assets and liabilities measured at fair value as either Level 1, Level 2 or Level 3 in the fair value hierarchy. The highest priority (Level 1) is assigned to valuations based on unadjusted quoted prices in active markets and the lowest priority (Level 3) is assigned to valuations based on significant unobservable inputs. See Note 1 (Summary of Significant Accounting Policies) for a detailed description of the fair value hierarchy.

In the determination of the classification of financial instruments in Level 2 or Level 3 of the fair value hierarchy, we consider all available information, including observable market data, indications of market liquidity and orderliness, and our understanding of the valuation techniques and significant inputs used. For securities in inactive markets, we use a predetermined percentage to evaluate the impact of fair value adjustments derived from weighting both external and internal indications of value to determine if the instrument is classified as Level 2 or Level 3. Otherwise, the classification of Level 2 or Level 3 is based upon the specific facts and circumstances of each instrument or instrument category and judgments are made regarding the significance of the Level 3 inputs to the instruments' fair value measurement in its entirety. If Level 3 inputs are considered significant, the instrument is classified as Level 3.

We do not classify equity securities in the fair value hierarchy if we use the non-published net asset value (NAV) per share (or its equivalent) that has been communicated to us as an investor as a practical expedient to measure fair value. We generally use NAV per share as the fair value measurement for certain nonmarketable equity fund investments. Marketable equity securities with published NAVs are classified in the fair value hierarchy.

Assets

SHORT-TERM FINANCIAL ASSETS Short-term financial assets include cash and due from banks, interest-earning deposits with banks, federal funds sold and securities purchased under resale agreements and due from customers on acceptances (classified in Other Assets). These assets are carried at historical cost. The carrying amount is a reasonable estimate of fair value because of the relatively short time between the origination of the instrument and its expected realization.

TRADING DEBT SECURITIES Trading debt securities are recorded at fair value on a recurring basis. These securities are valued using internal trader prices that are subject to price verification procedures. The fair values derived using internal valuation techniques are verified against multiple pricing sources, including prices obtained from third-party pricing services. These services compile prices from various sources and often apply matrix

pricing for similar securities when no price is observable. We review pricing methodologies provided by the pricing services in order to determine if observable market information is being used versus unobservable inputs. When evaluating the appropriateness of an internal trader price compared with pricing service prices, considerations include the range and quality of pricing service prices. Pricing service prices are used to ensure the reasonableness of a trader price; however, valuing financial instruments involves judgments acquired from knowledge of a particular market. If a trader asserts that a third party pricing service price is not reflective of market value, justification for using the trader price, including recent sales activity where possible, must be provided to and approved by the appropriate levels of management.

AVAILABLE-FOR-SALE AND HELD-TO-MATURITY DEBT

SECURITIES AFS debt securities are recorded at fair value on a recurring basis and HTM debt securities are recorded at amortized cost. HTM debt securities are subject to impairment and written down to fair value if fair value declines below amortized cost and we do not expect to recover the entire amortized cost basis of the security. Fair value measurement for AFS and HTM debt securities is based upon various sources of market pricing. Where available, we use quoted prices in active markets. When instruments are traded in secondary markets and quoted market prices do not exist for such securities, we predominantly use prices obtained from third-party pricing services and, to a lesser extent, may use prices obtained from independent broker-dealers (brokers), collectively vendor prices.

When vendor prices are deemed inappropriate by a trader who has knowledge of a particular market, vendor prices may be adjusted by weighting them with values from internal models. We also use internal models when no vendor prices are available. Internal models typically use discounted cash flow techniques or pricing models that make adjustments to quoted market prices for similar securities.

MORTGAGE LOANS HELD FOR SALE (MLHFS) We carry most of our residential MLHFS portfolio at fair value on a recurring basis. We carry our commercial MLHFS and certain residential MLHFS at LOCOM which may be written down to fair value on a nonrecurring basis. Fair value for both residential and commercial mortgages is based on quoted market prices, where available, or the prices for other mortgage whole loans with similar characteristics. We may use securitization prices that are adjusted for typical securitization activities including servicing value, portfolio composition, market conditions and liquidity. Where market pricing data is not available, we use a discounted cash flow model to estimate fair value.

LOANS HELD FOR SALE (LHFS) Loans used in our trading business are recorded at fair value on a recurring basis, and the fair value is based on current offerings in secondary markets for loans with similar characteristics. Loans carried at LOCOM, which are generally consumer loans, are subject to nonrecurring fair value adjustments. Fair value is determined based on pending transactions when available, or estimated using a discounted cash flow model.

LOANS Although most loans are recorded at amortized cost, reverse mortgages are recorded at fair value on a recurring basis and are valued using a discounted cash flow model. In addition,

Note 19: Fair Values of Assets and Liabilities (continued)

we record nonrecurring fair value adjustments to loans carried at amortized cost to reflect partial write-downs that are based on the observable market price of the loan or current appraised value of the collateral.

We also provide fair value estimates for loans that are not recorded at fair value on a recurring or nonrecurring basis. The fair value estimates of these loans are differentiated by their financial characteristics, such as product classification, loan category, pricing features and remaining maturity. Prepayment and credit loss estimates are evaluated and used in the valuation process.

DERIVATIVES All derivatives are recorded at fair value on a recurring basis. Derivative valuations include the use of available market prices for our exchange-traded derivatives, such as certain interest rate futures and option contracts. However, substantially all of our derivatives are traded in over-the-counter (OTC) markets where quoted market prices are not always readily available. Therefore we value most OTC derivatives using internal valuation techniques. Valuation techniques and inputs to internally-developed models depend on the type of derivative and nature of the underlying rate, price or index upon which the derivative's value is based. Key inputs can include yield curves, credit curves, foreign exchange rates, prepayment rates, volatility measurements and correlation of such inputs. The classification of derivatives between Level 2 and Level 3 of the fair value hierarchy can be particularly subjective. Examples of derivatives typically classified as Level 2 include generic interest rate swaps, foreign currency swaps, commodity swaps, and certain option and forward contracts. Examples of derivatives classified as Level 3 may include derivative loan commitments written for our mortgage loans that we intend to sell, long-dated equity options where volatility is not observable, credit risk participation swaps, and complex and highly structured derivatives.

MORTGAGE SERVICING RIGHTS (MSRs) Residential MSRs are carried at fair value on a recurring basis, and commercial MSRs, which are carried at LOCOM, will be written down to fair value if impaired. MSRs do not trade in an active market with readily observable prices. We determine the fair value of MSRs using a valuation model that estimates the present value of expected future net servicing income. The model incorporates assumptions that market participants use in estimating future net servicing income cash flows, including estimates of prepayment speeds (including housing price volatility for residential MSRs), discount rates, default rates, cost to service (including delinquency and foreclosure costs), escrow account earnings, contractual servicing fee income, ancillary income and late fees. Our valuation approach is validated by our internal valuation model validation group. Changes in the fair value of MSRs reflect the collection/realization of expected cash flows as well as changes in valuation inputs and assumptions. Fair value measurements of our MSRs use significant unobservable inputs and, accordingly, we classify them as Level 3.

EQUITY SECURITIES Marketable equity securities and certain nonmarketable equity securities which we have elected to account for under the fair value method are recorded at fair value on a recurring basis. Our remaining nonmarketable equity securities are accounted for using the equity method, cost method or measurement alternative and can be subject to nonrecurring fair value adjustments to record impairment. The carrying value of equity securities accounted for under the measurement alternative are also remeasured to fair value upon

the occurrence of orderly observable transactions of the same or similar securities of the same issuer.

We use quoted prices to determine the fair value of marketable equity securities as the securities are publicly traded. Quoted prices are typically not available for nonmarketable equity securities. We therefore use other methods, generally market comparable pricing, to determine fair value for such securities. We use all available information in making this determination, which includes observable transaction prices for the same or similar security, third-party pricing service prices, broker quotes, trading multiples of comparable public companies and discounted cash flow models. Where appropriate we make adjustments to observed market data to reflect the comparative differences between the market data and the attributes of our equity security, such as differences with public companies and other investment-specific considerations like liquidity, marketability or differences in terms of the instruments.

Substantially all of our nonmarketable equity securities accounted for under the cost method are Federal Reserve Bank stock and Federal Home Loan Bank stock, for which carrying values approximate fair value.

FORECLOSED ASSETS Foreclosed assets are carried at net realizable value, which represents fair value less costs to sell. Fair value is generally based upon independent market prices or appraised values of the collateral.

Liabilities

DEPOSIT AND SHORT-TERM FINANCIAL LIABILITIES Deposit and short-term financial liabilities including federal funds purchased, securities sold under repurchase agreements, commercial paper and other short-term borrowings, are recorded at historical cost. Carrying value is a reasonable estimate of fair value for short-term financial liabilities because of the relatively short time between their origination and expected realization. Fair values for deposits with contractual or defined maturities are estimated using discounted cash flow models. We are not required to estimate fair values for deposits with indeterminate maturities.

OTHER LIABILITIES Other liabilities recorded at fair value on a recurring basis predominantly include short sale liabilities. We value these instruments using quoted prices in active markets, where available. When quoted prices for the same instruments are not available or markets are not active, fair values are estimated using recent trades of similar securities.

LONG-TERM DEBT Our long-term debt is largely denominated in U.S. dollars and issued with a fixed or floating rate at varying levels of seniority and maturity. The long-term debt is recorded at amortized cost. We utilize third-party pricing service prices, discounted cash flow models, or a combination of the two when estimating fair value of our long-term debt.

Level 3 Asset and Liability Valuation Processes

We generally determine fair value of our Level 3 assets and liabilities by using internally-developed models and, to a lesser extent, prices obtained from vendors, which predominantly consist of third-party vendor pricing services. Our valuation processes vary depending on which approach is utilized.

INTERNAL MODEL VALUATIONS Many of our Level 3 fair value estimates are based on internally-developed models, which typically involve use of discounted cash flow or market comparable pricing techniques. Some of the inputs used in these valuations are unobservable. Unobservable inputs are generally

derived from historic performance of similar assets or determined from previous market trades in similar instruments. Unobservable inputs usually include discount rates, default rates, loss severity upon default, volatilities, correlations and prepayment rates. Such unobservable inputs can be correlated to similar portfolios with known historical experience or recent trades where particular unobservable inputs may be implied. We attempt to correlate each unobservable input to historical experience and other third-party data where available.

Internal valuation models are subject to review prescribed within our model risk management policies and procedures, which include model validation. Model validation helps ensure our models are appropriate for intended use and appropriate controls exist to help mitigate risk of invalid valuations. Model validation assesses the adequacy and appropriateness of our models, including reviewing its key components, such as inputs, processing components, logic or theory, output results and supporting model documentation. Validation also includes ensuring significant unobservable model inputs are appropriate given observable market transactions or other market data within the same or similar asset classes.

We also have ongoing monitoring procedures in place for our Level 3 assets and liabilities that use internal valuation models. These procedures, which are designed to provide reasonable assurance that models continue to perform as expected, include:

- ongoing analysis and benchmarking to market transactions and other independent market data (including pricing vendors, if available);
- back-testing of modeled fair values to actual realized transactions; and
- review of modeled valuation results against expectations, including review of significant or unusual fluctuations in value.

We update model inputs and methodologies periodically to reflect these monitoring procedures. Additionally, existing models are subject to periodic reviews and we perform full model revalidations as necessary.

All internal valuation models are subject to ongoing review by business-unit-level management, and subject to additional oversight by corporate-level risk management. Corporate oversight responsibilities include evaluating the adequacy of business unit risk management programs, maintaining company-wide model validation policies and standards and reporting the results of these activities to management and our Corporate Model Risk Committee. This committee consists of senior executive management and reports on top model risk issues to the Company's Risk Committee of the Board.

VENDOR-DEVELOPED VALUATIONS We routinely obtain pricing from third-party vendors to value our assets or liabilities. In certain limited circumstances, this includes our Level 3 assets or liabilities. We have processes in place to approve and periodically review third-party vendors to ensure information obtained and valuation techniques used are appropriate. This review may consist of, among other things, obtaining and evaluating control reports issued and pricing methodology materials distributed. We monitor and review vendor prices on an ongoing basis to ensure the fair values are reasonable and in line with market experience in similar asset classes. While the inputs used to determine fair value are not provided by the pricing vendors, and therefore unavailable for our review, we perform one or more of the following procedures to validate the pricing information and determine appropriate classification within the fair value hierarchy:

- comparison to other pricing vendors (if available);
- variance analysis of prices;
- corroboration of pricing by reference to other independent market data, such as market transactions and relevant benchmark indices;
- review of pricing by Company personnel familiar with market liquidity and other market-related conditions; and
- investigation of prices on a specific instrument-by-instrument basis.

Note 19: Fair Values of Assets and Liabilities (continued)**Fair Value Measurements from Vendors**

For certain assets and liabilities, we obtain fair value measurements from vendors and we record the unadjusted fair value in our financial statements. For instruments where we utilize vendor prices to record the price of an instrument, we perform the same procedures and controls as stated in the “Vendor-Developed Valuations” section.

Table 19.1 presents unadjusted fair value measurements obtained from third-party pricing services classified within the fair value hierarchy. Unadjusted fair value measurements

obtained from brokers and fair value measurements obtained from brokers or third-party pricing services that we have adjusted to determine the fair value are excluded from Table 19.1.

The unadjusted fair value measurements obtained from brokers for AFS debt securities were \$45 million in Level 2 assets and \$126 million in Level 3 assets at December 31, 2019, and \$45 million and \$129 million at December 31, 2018, respectively.

Table 19.1: Fair Value Measurements obtained from Third-Party Pricing Services

(in millions)	December 31, 2019			December 31, 2018		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Trading debt securities	\$ 634	329	—	899	256	—
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	13,460	1,500	—	10,399	2,949	—
Securities of U.S. states and political subdivisions	—	39,868	34	—	48,377	43
Mortgage-backed securities	—	167,172	42	—	160,162	41
Other debt securities (1)	—	38,067	650	—	44,292	758
Total available-for-sale debt securities	13,460	246,607	726	10,399	255,780	842
Equity securities:						
Marketable	—	110	—	—	158	—
Nonmarketable	—	—	—	—	1	—
Total equity securities	—	110	—	—	159	—
Derivative assets	12	1	—	17	—	—
Derivative liabilities	(11)	(3)	—	(12)	—	—

(1) Includes corporate debt securities, collateralized loan and other debt obligations, asset-backed securities, and other debt securities.

Assets and Liabilities Recorded at Fair Value on a Recurring Basis

Table 19.2 presents the balances of assets and liabilities recorded at fair value on a recurring basis.

Table 19.2: Fair Value on a Recurring Basis

(in millions)	Level 1	Level 2	Level 3	Netting (1)	Total
December 31, 2019					
Trading debt securities:					
Securities of U.S. Treasury and federal agencies	\$ 32,335	4,382	—	—	36,717
Securities of U.S. states and political subdivisions	—	2,434	—	—	2,434
Collateralized loan obligations	—	555	183	—	738
Corporate debt securities	—	11,006	38	—	11,044
Mortgage-backed securities	—	27,712	—	—	27,712
Asset-backed securities	—	1,081	—	—	1,081
Other trading debt securities	—	5	2	—	7
Total trading debt securities	32,335	47,175	223	—	79,733
Available-for-sale debt securities:					
Securities of U.S. Treasury and federal agencies	13,460	1,500	—	—	14,960
Securities of U.S. states and political subdivisions	—	39,924	413	—	40,337
Mortgage-backed securities:					
Federal agencies	—	162,453	—	—	162,453
Residential	—	827	—	—	827
Commercial	—	3,892	42	—	3,934
Total mortgage-backed securities	—	167,172	42	—	167,214
Corporate debt securities	37	6,159	367	—	6,563
Collateralized loan and other debt obligations	—	29,055	640	—	29,695
Asset-backed securities:					
Automobile loans and leases	—	951	—	—	951
Home equity loans	—	—	—	—	—
Other asset-backed securities	—	3,635	103	—	3,738
Total asset-backed securities	—	4,586	103	—	4,689
Other debt securities	—	1	—	—	1
Total available-for-sale debt securities	13,497	248,397	1,565 (2)	—	263,459
Mortgage loans held for sale	—	15,408	1,198	—	16,606
Loans held for sale	—	956	16	—	972
Loans	—	—	171	—	171
Mortgage servicing rights (residential)	—	—	11,517	—	11,517
Derivative assets:					
Interest rate contracts	26	23,792	229	—	24,047
Commodity contracts	—	1,413	8	—	1,421
Equity contracts	2,946	4,135	1,455	—	8,536
Foreign exchange contracts	12	5,197	5	—	5,214
Credit contracts	—	49	59	—	108
Netting	—	—	—	(25,123)	(25,123)
Total derivative assets	2,984	34,586	1,756	(25,123)	14,203
Equity securities - excluding securities at NAV:					
Marketable	33,702	216	3	—	33,921
Nonmarketable	—	22	7,847	—	7,869
Total equity securities	33,702	238	7,850	—	41,790
Total assets included in the fair value hierarchy	\$ 82,518	346,760	24,296	(25,123)	428,451
Equity securities at NAV (3)					
Total assets recorded at fair value					146
Total assets recorded at fair value					428,597
Derivative liabilities:					
Interest rate contracts	\$ (23)	(19,328)	(15)	—	(19,366)
Commodity contracts	—	(1,746)	(24)	—	(1,770)
Equity contracts	(2,011)	(6,729)	(1,724)	—	(10,464)
Foreign exchange contracts	(11)	(6,213)	(23)	—	(6,247)
Credit contracts	—	(53)	(30)	—	(83)
Netting	—	—	—	28,851	28,851
Total derivative liabilities	(2,045)	(34,069)	(1,816)	28,851	(9,079)
Short sale liabilities:					
Securities of U.S. Treasury and federal agencies	(9,035)	(31)	—	—	(9,066)
Mortgage-backed securities	—	(2)	—	—	(2)
Corporate debt securities	—	(5,915)	—	—	(5,915)
Equity securities	(2,447)	—	—	—	(2,447)
Other securities	—	—	—	—	—
Total short sale liabilities	(11,482)	(5,948)	—	—	(17,430)
Other liabilities	—	—	(2)	—	(2)
Total liabilities recorded at fair value	\$ (13,527)	(40,017)	(1,818)	28,851	(26,511)

(1) Represents balance sheet netting of derivative asset and liability balances, related cash collateral and portfolio level counterparty valuation adjustments. See Note 18 (Derivatives) for additional information.

(2) A significant portion of the balance consists of securities that are investment grade based on ratings received from the ratings agencies or internal credit grades categorized as investment grade if external ratings are not available. The securities are classified as Level 3 due to limited market activity.

(3) Consists of certain nonmarketable equity securities that are measured at fair value using NAV per share (or its equivalent) as a practical expedient and are excluded from the fair value hierarchy.

(continued on following page)

Note 19: Fair Values of Assets and Liabilities (continued)

(continued from previous page)

(in millions)	Level 1	Level 2	Level 3	Netting (1)	Total
December 31, 2018					
Trading debt securities:					
Securities of U.S. Treasury and federal agencies	\$ 20,525	2,892	—	—	23,417
Securities of U.S. states and political subdivisions	—	3,272	3	—	3,275
Collateralized loan obligations	—	673	237	—	910
Corporate debt securities	—	10,723	34	—	10,757
Mortgage-backed securities	—	30,715	—	—	30,715
Asset-backed securities	—	893	—	—	893
Other trading debt securities	—	6	16	—	22
Total trading debt securities	20,525	49,174	290	—	69,989
Available-for-sale debt securities:					
Securities of U.S. Treasury and federal agencies	10,399	2,949	—	—	13,348
Securities of U.S. states and political subdivisions	—	48,820	444	—	49,264
Mortgage-backed securities:					
Federal agencies	—	153,203	—	—	153,203
Residential	—	2,775	—	—	2,775
Commercial	—	4,184	41	—	4,225
Total mortgage-backed securities	—	160,162	41	—	160,203
Corporate debt securities	34	5,867	370	—	6,271
Collateralized loan and other debt obligations	—	34,543	800	—	35,343
Asset-backed securities:					
Automobile loans and leases	—	925	—	—	925
Home equity loans	—	112	—	—	112
Other asset-backed securities	—	4,056	389	—	4,445
Total asset-backed securities	—	5,093	389	—	5,482
Other debt securities	—	1	—	—	1
Total available-for-sale debt securities	10,433	257,435	2,044 (2)	—	269,912
Mortgage loans held for sale	—	10,774	997	—	11,771
Loans held for sale	—	1,409	60	—	1,469
Loans	—	—	244	—	244
Mortgage servicing rights (residential)	—	—	14,649	—	14,649
Derivative assets:					
Interest rate contracts	46	18,294	95	—	18,435
Commodity contracts	—	1,535	53	—	1,588
Equity contracts	1,648	4,582	1,315	—	7,545
Foreign exchange contracts	17	6,689	8	—	6,714
Credit contracts	—	179	99	—	278
Netting	—	—	—	(23,790)	(23,790)
Total derivative assets	1,711	31,279	1,570	(23,790)	10,770
Equity securities - excluding securities at NAV:					
Marketable	23,205	757	—	—	23,962
Nonmarketable	—	24	5,468	—	5,492
Total equity securities	23,205	781	5,468	—	29,454
Total assets included in the fair value hierarchy	\$ 55,874	350,852	25,322	(23,790)	408,258
Equity securities at NAV (3)					102
Total assets recorded at fair value					408,360
Derivative liabilities:					
Interest rate contracts	\$ (21)	(16,217)	(70)	—	(16,308)
Commodity contracts	—	(2,287)	(49)	—	(2,336)
Equity contracts	(1,492)	(3,186)	(1,332)	—	(6,010)
Foreign exchange contracts	(12)	(7,067)	(34)	—	(7,113)
Credit contracts	—	(216)	(64)	—	(280)
Netting	—	—	—	23,548	23,548
Total derivative liabilities	(1,525)	(28,973)	(1,549)	23,548	(8,499)
Short sale liabilities:					
Securities of U.S. Treasury and federal agencies	(11,850)	(411)	—	—	(12,261)
Mortgage-backed securities	—	(47)	—	—	(47)
Corporate debt securities	—	(4,505)	—	—	(4,505)
Equity securities	(2,902)	(2)	—	—	(2,904)
Other securities	—	(3)	—	—	(3)
Total short sale liabilities	(14,752)	(4,968)	—	—	(19,720)
Other liabilities	—	—	(2)	—	(2)
Total liabilities recorded at fair value	\$ (16,277)	(33,941)	(1,551)	23,548	(28,221)

- Represents balance sheet netting of derivative asset and liability balances, related cash collateral and portfolio level counterparty valuation adjustments. See Note 18 (Derivatives) for additional information.
- A significant portion of the balance consists of securities that are investment grade based on ratings received from the ratings agencies or internal credit grades categorized as investment grade if external ratings are not available. The securities are classified as Level 3 due to limited market activity.
- Consists of certain nonmarketable equity investments that are measured at fair value using NAV per share (or its equivalent) as a practical expedient and are excluded from the fair value hierarchy.

Changes in Fair Value Levels

We monitor the availability of observable market data to assess the appropriate classification of financial instruments within the fair value hierarchy and transfer between Level 1, Level 2, and Level 3 accordingly. Observable market data includes but is not limited to quoted prices and market transactions. Changes in economic conditions or market liquidity generally will drive changes in availability of observable market data. Changes in

availability of observable market data, which also may result in changing the valuation technique used, are generally the cause of transfers between Level 1, Level 2, and Level 3. The amounts reported as transfers represent the fair value as of the beginning of the quarter in which the transfer occurred.

The changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2019, are presented in Table 19.3.

Table 19.3: Changes in Level 3 Fair Value Assets and Liabilities on a Recurring Basis – 2019

(in millions)	Balance, beginning of period	Total net gains (losses) included in		Purchases, sales, issuances and settlements, net (1)	Transfers into Level 3 (2)	Transfers out of Level 3 (3)	Balance, end of period	Net unrealized gains (losses) included in income related to assets and liabilities held at period end (4)
		Net income	Other compre- hensive income					
Year ended December 31, 2019								
Trading debt securities:								
Securities of U.S. states and political subdivisions	\$ 3	—	—	(2)	—	(1)	—	—
Collateralized loan obligations	237	(30)	—	(22)	—	(2)	183	(35)
Corporate debt securities	34	3	—	6	1	(6)	38	5
Other trading debt securities	16	(4)	—	(10)	—	—	2	(1)
Total trading debt securities	290	(31)	—	(28)	1	(9)	223	(31) (5)
Available-for-sale debt securities:								
Securities of U.S. states and political subdivisions	444	2	2	14	—	(49)	413	—
Mortgage-backed securities:								
Residential	—	—	—	—	—	—	—	—
Commercial	41	—	—	(5)	6	—	42	—
Total mortgage-backed securities	41	—	—	(5)	6	—	42	—
Corporate debt securities	370	3	(5)	(1)	—	—	367	(4)
Collateralized loan and other debt obligations	800	29	(37)	(152)	—	—	640	—
Asset-backed securities:								
Other asset-backed securities	389	—	—	(133)	—	(153)	103	—
Total asset-backed securities	389	—	—	(133)	—	(153)	103	—
Total available-for-sale debt securities	2,044	34	(40)	(277)	6	(202)	1,565	(4) (6)
Mortgage loans held for sale	997	58	—	(140)	299	(16)	1,198	54 (7)
Loans held for sale	60	(2)	—	(4)	55	(93)	16	(3)
Loans	244	—	—	(73)	—	—	171	(8) (7)
Mortgage servicing rights (residential) (8)	14,649	(4,779)	—	1,647	—	—	11,517	(2,569) (7)
Net derivative assets and liabilities:								
Interest rate contracts	25	585	—	(396)	—	—	214	249
Commodity contracts	4	(203)	—	158	2	23	(16)	9
Equity contracts	(17)	(571)	—	292	6	21	(269)	(186)
Foreign exchange contracts	(26)	34	—	(26)	—	—	(18)	9
Credit contracts	35	(7)	—	1	—	—	29	(6)
Total derivative contracts	21	(162)	—	29	8	44	(60)	75 (9)
Equity securities:								
Marketable	—	—	—	—	3	—	3	—
Nonmarketable	5,468	2,383	—	(1)	9	(12)	7,847	2,386
Total equity securities	5,468	2,383	—	(1)	12	(12)	7,850	2,386 (10)
Other liabilities	(2)	—	—	—	—	—	(2)	— (7)

(1) See Table 19.4 for detail.

(2) All assets and liabilities transferred into level 3 were previously classified within level 2.

(3) All assets and liabilities transferred out of level 3 are classified as level 2, except for \$153 million of asset-backed securities that were transferred to loans during third quarter 2019.

(4) Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.

(5) Included in net gains (losses) from trading activities in the income statement.

(6) Included in net gains (losses) from debt securities in the income statement.

(7) Included in mortgage banking and other noninterest income in the income statement.

(8) For more information on the changes in mortgage servicing rights, see Note 11 (Mortgage Banking Activities).

(9) Included in mortgage banking income, net gains from trading activities and from equity securities, and other noninterest income.

(10) Included in net gains (losses) from equity securities in the income statement.

Note 19: Fair Values of Assets and Liabilities (continued)

Table 19.4 presents gross purchases, sales, issuances and settlements related to the changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2019.

Table 19.4: Gross Purchases, Sales, Issuances and Settlements – Level 3 – 2019

(in millions)	Purchases	Sales	Issuances	Settlements	Net
Year ended December 31, 2019					
Trading debt securities:					
Securities of U.S. states and political subdivisions	\$ —	—	—	(2)	(2)
Collateralized loan obligations	372	(372)	—	(22)	(22)
Corporate debt securities	19	(13)	—	—	6
Other trading debt securities	—	—	—	(10)	(10)
Total trading debt securities	391	(385)	—	(34)	(28)
Available-for-sale debt securities:					
Securities of U.S. states and political subdivisions	—	—	169	(155)	14
Mortgage-backed securities:					
Residential	—	—	—	—	—
Commercial	—	—	—	(5)	(5)
Total mortgage-backed securities	—	—	—	(5)	(5)
Corporate debt securities	18	—	—	(19)	(1)
Collateralized loan and other debt obligations	155	—	—	(307)	(152)
Asset-backed securities:					
Other asset-backed securities	—	(9)	133	(257)	(133)
Total asset-backed securities	—	(9)	133	(257)	(133)
Total available-for-sale debt securities	173	(9)	302	(743)	(277)
Mortgage loans held for sale	96	(235)	248	(249)	(140)
Loans held for sale	12	(2)	—	(14)	(4)
Loans	3	—	10	(86)	(73)
Mortgage servicing rights (residential) (1)	—	(286)	1,933	—	1,647
Net derivative assets and liabilities:					
Interest rate contracts	—	—	—	(396)	(396)
Commodity contracts	—	—	—	158	158
Equity contracts	—	—	—	292	292
Foreign exchange contracts	—	—	—	(26)	(26)
Credit contracts	13	(12)	—	—	1
Total derivative contracts	13	(12)	—	28	29
Equity securities:					
Nonmarketable	—	(1)	—	—	(1)
Total equity securities	—	(1)	—	—	(1)
Other liabilities	—	—	—	—	—

(1) For more information on the changes in mortgage servicing rights, see Note 11 (Mortgage Banking Activities).

The changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2018, are presented in Table 19.5.

Table 19.5: Changes in Level 3 Fair Value Assets and Liabilities on a Recurring Basis – 2018

(in millions)	Balance, beginning of period	Total net gains (losses) included in		Purchases, sales, issuances and settlements, net (1)	Transfers into Level 3 (2)	Transfers out of Level 3 (3)	Balance, end of period	Net unrealized gains (losses) included in income related to assets and liabilities held at period end (4)
		Net income	Other compre- hensive income					
Year ended December 31, 2018								
Trading debt securities:								
Securities of U.S. states and political subdivisions	\$ 3	—	—	—	—	—	3	—
Collateralized loan obligations	354	(12)	—	(101)	—	(4)	237	(14)
Corporate debt securities	31	(1)	—	16	—	(12)	34	(1)
Other trading debt securities	19	(3)	—	—	—	—	16	—
Total trading debt securities	407	(16)	—	(85)	—	(16)	290	(15) (5)
Available-for-sale debt securities:								
Securities of U.S. states and political subdivisions	925	8	(8)	(137)	—	(344)	444	—
Mortgage-backed securities:								
Residential	1	—	—	(1)	—	—	—	—
Commercial	75	—	(1)	(33)	—	—	41	(1)
Total mortgage-backed securities	76	—	(1)	(34)	—	—	41	(1)
Corporate debt securities	407	4	(3)	(38)	—	—	370	—
Collateralized loan and other debt obligations	1,020	72	5	(297)	—	—	800	—
Asset-backed securities:								
Other asset-backed securities	566	5	(11)	(171)	—	—	389	(3)
Total asset-backed securities	566	5	(11)	(171)	—	—	389	(3)
Total available-for-sale debt securities	2,994	89	(18)	(677)	—	(344)	2,044	(4) (6)
Mortgage loans held for sale	998	(27)	—	(36)	72	(10)	997	(22) (7)
Loans held for sale	14	2	—	(36)	80	—	60	1
Loans	376	(1)	—	(131)	—	—	244	(11) (7)
Mortgage servicing rights (residential) (8)	13,625	(915)	—	1,939	—	—	14,649	960 (7)
Net derivative assets and liabilities:								
Interest rate contracts	71	(397)	—	351	—	—	25	(42)
Commodity contracts	19	3	—	(11)	(7)	—	4	(1)
Equity contracts	(511)	(108)	—	522	(1)	81	(17)	(169)
Foreign exchange contracts	7	(42)	—	9	—	—	(26)	(26)
Credit contracts	36	5	—	(6)	—	—	35	(1)
Total derivative contracts	(378)	(539)	—	865	(8)	81	21	(239) (9)
Equity securities:								
Marketable	—	—	—	—	—	—	—	—
Nonmarketable (10)	5,203	703	—	(450)	16	(4)	5,468	642
Total equity securities	5,203	703	—	(450)	16	(4)	5,468	642 (11)
Other liabilities	(3)	1	—	—	—	—	(2)	— (7)

- (1) See Table 19.6 for detail.
- (2) All assets and liabilities transferred into level 3 were previously classified within level 2.
- (3) All assets and liabilities transferred out of level 3 are classified as level 2.
- (4) Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.
- (5) Included in net gains (losses) from trading activities in the income statement.
- (6) Included in net gains (losses) from debt securities in the income statement.
- (7) Included in mortgage banking and other noninterest income in the income statement.
- (8) For more information on the changes in mortgage servicing rights, see Note 11 (Mortgage Banking Activities)
- (9) Included in mortgage banking income, net gains from trading activities and from equity securities, and other noninterest income.
- (10) Beginning balance includes \$382 million of auction rate securities, which changed from the cost to fair value method of accounting in connection with our adoption of ASU 2016-01 in first quarter 2018.
- (11) Included in net gains (losses) from equity securities in the income statement.

Note 19: Fair Values of Assets and Liabilities (continued)

Table 19.6 presents gross purchases, sales, issuances and settlements related to the changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2018.

Table 19.6: Gross Purchases, Sales, Issuances and Settlements – Level 3 – 2018

(in millions)	Purchases	Sales	Issuances	Settlements	Net
Year ended December 31, 2018					
Trading debt securities:					
Securities of U.S. states and political subdivisions	\$ —	—	—	—	—
Collateralized loan obligations	408	(348)	—	(161)	(101)
Corporate debt securities	20	(4)	—	—	16
Other trading debt securities	—	—	—	—	—
Total trading debt securities	428	(352)	—	(161)	(85)
Available-for-sale debt securities:					
Securities of U.S. states and political subdivisions	—	(6)	79	(210)	(137)
Mortgage-backed securities:					
Residential	—	—	—	(1)	(1)
Commercial	—	—	—	(33)	(33)
Total mortgage-backed securities	—	—	—	(34)	(34)
Corporate debt securities	33	—	—	(71)	(38)
Collateralized loan and other debt obligations	61	(149)	—	(209)	(297)
Asset-backed securities:					
Other asset-backed securities	25	(12)	166	(350)	(171)
Total asset-backed securities	25	(12)	166	(350)	(171)
Total available-for-sale debt securities	119	(167)	245	(874)	(677)
Mortgage loans held for sale	87	(320)	353	(156)	(36)
Loans held for sale	4	(40)	—	—	(36)
Loans	8	—	17	(156)	(131)
Mortgage servicing rights (residential) (1)	—	(71)	2,010	—	1,939
Net derivative assets and liabilities:					
Interest rate contracts	—	—	—	351	351
Commodity contracts	—	—	—	(11)	(11)
Equity contracts	3	(37)	—	556	522
Foreign exchange contracts	—	—	—	9	9
Credit contracts	12	(7)	—	(11)	(6)
Total derivative contracts	15	(44)	—	894	865
Equity securities:					
Marketable	—	—	—	—	—
Nonmarketable	—	(51)	—	(399)	(450)
Total equity securities	—	(51)	—	(399)	(450)
Other liabilities	—	—	—	—	—

(1) For more information on the changes in mortgage servicing rights, see Note 11 (Mortgage Banking Activities).

The changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2017, are presented in Table 19.7.

Table 19.7: Changes in Level 3 Fair Value Assets and Liabilities on a Recurring Basis – 2017

(in millions)	Balance, beginning of period	Total net gains (losses) included in		Purchases, sales, issuances and settlements, net (1)	Transfers into Level 3 (2)	Transfers out of Level 3 (3)	Balance, end of period	Net unrealized gains (losses) included in income related to assets and liabilities held at period end (4)
		Net income	Other compre- hensive income					
Year ended December 31, 2017								
Trading debt securities:								
Securities of U.S. states and political subdivisions	\$ 3	—	—	—	—	—	3	—
Collateralized loan obligations	309	3	—	42	—	—	354	(13)
Corporate debt securities	34	2	—	(7)	6	(4)	31	2
Other trading debt securities	28	(9)	—	—	—	—	19	(4)
Total trading debt securities	374	(4)	—	35	6	(4)	407	(15) (5)
Available-for-sale debt securities:								
Securities of U.S. states and political subdivisions	1,140	4	5	1,105	5	(1,334)	925	—
Mortgage-backed securities:								
Residential	1	—	—	—	—	—	1	—
Commercial	91	(4)	—	(12)	—	—	75	(11)
Total mortgage-backed securities	92	(4)	—	(12)	—	—	76	(11)
Corporate debt securities	432	(1)	23	(47)	—	—	407	—
Collateralized loan and other debt obligations	879	22	103	16	—	—	1,020	—
Asset-backed securities:								
Other asset-backed securities	962	1	3	(400)	—	—	566	—
Total asset-backed securities	962	1	3	(400)	—	—	566	—
Total available-for-sale debt securities	3,505	22	134	662	5	(1,334)	2,994	(11) (6)
Mortgage loans held for sale	985	(36)	—	(75)	134	(10)	998	(34) (7)
Loans held for sale	—	1	—	(3)	34	(18)	14	—
Loans	758	(6)	—	(376)	—	—	376	(12) (7)
Mortgage servicing rights (residential) (8)	12,959	(2,115)	—	2,781	—	—	13,625	(126) (7)
Net derivative assets and liabilities:								
Interest rate contracts	121	604	—	(654)	—	—	71	(52)
Commodity contracts	23	(17)	—	13	2	(2)	19	15
Equity contracts	(267)	(199)	—	(37)	(53)	45	(511)	(259)
Foreign exchange contracts	12	(5)	—	—	—	—	7	6
Credit contracts	77	24	—	(65)	—	—	36	(62)
Other derivative contracts	(47)	27	—	20	—	—	—	—
Total derivative contracts	(81)	434	—	(723)	(51)	43	(378)	(352) (9)
Equity securities:								
Marketable	—	—	—	—	—	—	—	—
Nonmarketable	3,259	1,563	—	(2)	1	—	4,821	1,569
Total equity securities	3,259	1,563	—	(2)	1	—	4,821	1,569 (10)
Short sale liabilities	—	—	—	—	—	—	—	— (5)
Other liabilities	(4)	1	—	—	—	—	(3)	— (7)

(1) See Table 19.8 for detail.

(2) All assets and liabilities transferred into level 3 were previously classified within level 2.

(3) All assets and liabilities transferred out of level 3 are classified as level 2.

(4) Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.

(5) Included in net gains (losses) from trading activities in the income statement.

(6) Included in net gains (losses) from debt securities in the income statement.

(7) Included in mortgage banking and other noninterest income in the income statement.

(8) For more information on the changes in mortgage servicing rights, see Note 11 (Mortgage Banking Activities).

(9) Included in mortgage banking income, net gains from trading activities and from equity securities, and other noninterest income.

(10) Included in net gains (losses) from equity securities in the income statement.

Note 19: Fair Values of Assets and Liabilities (continued)

Table 19.8 presents gross purchases, sales, issuances and settlements related to the changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2017.

Table 19.8: Gross Purchases, Sales, Issuances and Settlements – Level 3 – 2017

(in millions)	Purchases	Sales	Issuances	Settlements	Net
Year ended December 31, 2017					
Trading debt securities:					
Securities of U.S. states and political subdivisions	\$ 37	(36)	—	(1)	—
Collateralized loan obligations	439	(250)	—	(147)	42
Corporate debt securities	25	(32)	—	—	(7)
Other trading debt securities	—	—	—	—	—
Total trading debt securities	501	(318)	—	(148)	35
Available-for-sale debt securities:					
Securities of U.S. states and political subdivisions	—	(68)	1,369	(196)	1,105
Mortgage-backed securities:					
Residential	—	—	—	—	—
Commercial	—	—	—	(12)	(12)
Total mortgage-backed securities	—	—	—	(12)	(12)
Corporate debt securities	14	(4)	—	(57)	(47)
Collateralized loan and other debt obligations	135	—	—	(119)	16
Asset-backed securities:					
Other asset-backed securities	—	—	211	(611)	(400)
Total asset-backed securities	—	—	211	(611)	(400)
Total available-for-sale debt securities	149	(72)	1,580	(995)	662
Mortgage loans held for sale	79	(485)	489	(158)	(75)
Loans held for sale	—	(2)	—	(1)	(3)
Loans	6	(129)	19	(272)	(376)
Mortgage servicing rights (residential) (1)	541	(24)	2,263	1	2,781
Net derivative assets and liabilities:					
Interest rate contracts	—	—	—	(654)	(654)
Commodity contracts	—	—	—	13	13
Equity contracts	—	(118)	—	81	(37)
Foreign exchange contracts	—	—	—	—	—
Credit contracts	6	(3)	—	(68)	(65)
Other derivative contracts	—	—	—	20	20
Total derivative contracts	6	(121)	—	(608)	(723)
Equity securities:					
Marketable	—	—	—	—	—
Nonmarketable	—	(2)	—	—	(2)
Total equity securities	—	(2)	—	—	(2)
Short sale liabilities	3	(3)	—	—	—
Other liabilities	—	—	—	—	—

(1) For more information on the changes in mortgage servicing rights, see Note 11 (Mortgage Banking Activities).

Table 19.9 and Table 19.10 provide quantitative information about the valuation techniques and significant unobservable inputs used in the valuation of substantially all of our Level 3 assets and liabilities measured at fair value on a recurring basis for which we use an internal model.

The significant unobservable inputs for Level 3 assets and liabilities inherent in the fair values obtained from third-party vendors are not included in the table, as the specific inputs applied are not provided by the vendor (see discussion in the “Level 3 Asset and Liability Valuation Processes” section within this Note regarding vendor-developed valuations).

In addition, the table excludes the valuation techniques and significant unobservable inputs for certain classes of Level 3 assets and liabilities measured using internal models that we consider, both individually and in the aggregate, insignificant relative to our overall Level 3 assets and liabilities. We made this determination based upon an evaluation of each class, which considered the magnitude of the positions, nature of the unobservable inputs and potential for significant changes in fair value due to changes in those inputs.

Weighted averages of inputs are calculated using outstanding unpaid principal balance for cash instruments, such as loans and securities, and notional amounts for derivative instruments.

Table 19.9: Valuation Techniques – Recurring Basis – December 31, 2019

(\$ in millions, except cost to service amounts)	Fair Value Level 3	Valuation Technique(s)	Significant Unobservable Input	Range of Inputs	Weighted Average
December 31, 2019					
Trading and available-for-sale debt securities:					
Securities of U.S. states and political subdivisions:					
Government, healthcare and other revenue bonds	\$ 379	Discounted cash flow	Discount rate	1.3 - 5.4 %	2.4
	34	Vendor priced			
Collateralized loan and other debt obligations	183	Market comparable pricing	Comparability adjustment	(15.0) - 19.2	1.3
	640	Vendor priced			
Corporate debt securities	220	Discounted cash flow	Discount rate	3.2 - 14.9	9.2
	60	Market comparable pricing	Comparability adjustment	(19.7) - 14	(4.4)
	125	Vendor priced			
Asset-backed securities:					
Diversified payment rights (1)	92	Discounted cash flow	Discount rate	2.3 - 3.1	2.8
Other commercial and consumer	11	Vendor priced			
Mortgage loans held for sale (residential)	1,183	Discounted cash flow	Default rate	0.0 - 15.5	0.7
			Discount rate	3.0 - 5.6	4.5
			Loss severity	0.0 - 43.5	21.7
			Prepayment rate	5.7 - 15.4	7.8
	15	Market comparable pricing	Comparability adjustment	(56.3) - (6.3)	(40.3)
Loans (2)	171	Discounted cash flow	Discount rate	3.9 - 4.3	4.1
			Prepayment rate	6.0 - 100.0	85.6
			Loss severity	0.0 - 36.5	14.1
Mortgage servicing rights (residential)	11,517	Discounted cash flow	Cost to service per loan (3)	\$ 61 - 495	102
			Discount rate	6.0 - 13.6 %	7.2
			Prepayment rate (4)	9.6 - 24.4	11.9
Net derivative assets and (liabilities):					
Interest rate contracts	146	Discounted cash flow	Default rate	0.0 - 5.0	1.7
			Loss severity	50.0 - 50.0	50.0
			Prepayment rate	2.8 - 25.0	15.0
Interest rate contracts: derivative loan commitments	68	Discounted cash flow	Fall-out factor	1.0 - 99.0	16.7
			Initial-value servicing	(32.2) - 149.0 bps	36.4
Equity contracts	147	Discounted cash flow	Conversion factor	(8.8) - 0.0 %	(7.7)
			Weighted average life	0.5 - 3.0 yrs	1.5
	(416)	Option model	Correlation factor	(77.0) - 99.0 %	23.8
			Volatility factor	6.8 - 100.0	18.7
Credit contracts	2	Market comparable pricing	Comparability adjustment	(56.1) - 10.8	(16.0)
	27	Option model	Credit spread	0.0 - 17.8	0.8
			Loss severity	12.0 - 60.0	45.6
Nonmarketable equity securities	7,847	Market comparable pricing	Comparability adjustment	(20.2) - (4.2)	(14.6)
Insignificant Level 3 assets, net of liabilities	27				
Total level 3 assets, net of liabilities	\$ 22,478	(5)			

(1) Securities backed by specified sources of current and future receivables generated from non-U.S. originators.

(2) Consists of reverse mortgage loans.

(3) The high end of the range of inputs is for servicing modified loans. For non-modified loans the range is \$61 - \$231.

(4) Includes a blend of prepayment speeds and expected defaults. Prepayment speeds are influenced by mortgage interest rates as well as our estimation of drivers of borrower behavior.

(5) Consists of total Level 3 assets of \$24.3 billion and total Level 3 liabilities of \$1.8 billion, before netting of derivative balances.

Note 19: Fair Values of Assets and Liabilities (continued)

Table 19.10: Valuation Techniques – Recurring Basis – December 31, 2018

(\$ in millions, except cost to service amounts)	Fair Value Level 3	Valuation Technique(s)	Significant Unobservable Input	Range of Inputs	Weighted Average
December 31, 2018					
Trading and available-for-sale debt securities:					
Securities of U.S. states and political subdivisions:					
Government, healthcare and other revenue bonds	\$ 404	Discounted cash flow	Discount rate	2.1 - 6.4 %	3.4
	43	Vendor priced			
Collateralized loan and other debt obligations	298	Market comparable pricing	Comparability adjustment	(13.5) - 22.1 %	3.2
	739	Vendor priced			
Corporate debt securities	220	Discounted cash flow	Discount rate	4.0 - 11.7	8.5
	56	Market comparable pricing	Comparability adjustment	(11.3) - 16.6	(1.4)
	128	Vendor priced			
Asset-backed securities:					
Diversified payment rights (1)	171	Discounted cash flow	Discount rate	3.4 - 6.2	4.4
Other commercial and consumer	198 (2)	Discounted cash flow	Discount rate	4.6 - 5.2	4.7
			Weighted average life	1.1 - 1.5 yrs	1.1
	20	Vendor priced			
Mortgage loans held for sale (residential)	982	Discounted cash flow	Default rate	0.0 - 15.6 %	0.8
			Discount rate	1.1 - 6.6	5.5
			Loss severity	0.0 - 43.3	23.4
			Prepayment rate	3.2 - 13.4	4.6
	15	Market comparable pricing	Comparability adjustment	(56.3) - (6.3)	(36.3)
Loans (3)	244	Discounted cash flow	Discount rate	3.4 - 6.4	4.2
			Prepayment rate	2.9 - 100.0	87.2
			Loss severity	0.0 - 34.8	10.2
Mortgage servicing rights (residential)	14,649	Discounted cash flow	Cost to service per loan (4)	\$ 62 - 507	106
			Discount rate	7.1 - 15.3 %	8.1
			Prepayment rate (5)	9.0 - 23.5	9.9
Net derivative assets and (liabilities):					
Interest rate contracts	(35)	Discounted cash flow	Default rate	0.0 - 5.0	2.0
			Loss severity	50.0 - 50.0	50.0
			Prepayment rate	2.8 - 25.0	13.8
Interest rate contracts: derivative loan commitments	60	Discounted cash flow	Fall-out factor	1.0 - 99.0	19.4
			Initial-value servicing	(36.6) - 91.7 bps	18.5
Equity contracts	104	Discounted cash flow	Conversion factor	(9.3) - 0.0 %	(7.8)
			Weighted average life	1.0 - 3.0 yrs	1.8
	(121)	Option model	Correlation factor	(77.0) - 99.0 %	21.6
			Volatility factor	6.5 - 100.0	21.8
Credit contracts	3	Market comparable pricing	Comparability adjustment	(15.5) - 40.0	3.5
	32	Option model	Credit spread	0.9 - 21.5	1.3
			Loss severity	13.0 - 60.0	45.2
Nonmarketable equity securities	5,468	Market comparable pricing	Comparability adjustment	(20.6) - (4.3)	(15.8)
Insignificant Level 3 assets, net of liabilities	93				
Total level 3 assets, net of liabilities	\$ 23,771 (6)				

(1) Securities backed by specified sources of current and future receivables generated from non-U.S. originators.

(2) Predominantly consists of investments in asset-backed securities that are revolving in nature, for which the timing of advances and repayments of principal are uncertain.

(3) Consists of reverse mortgage loans.

(4) The high end of the range of inputs is for servicing modified loans. For non-modified loans the range is \$62 - \$204.

(5) Includes a blend of prepayment speeds and expected defaults. Prepayment speeds are influenced by mortgage interest rates as well as our estimation of drivers of borrower behavior.

(6) Consists of total Level 3 assets of \$25.3 billion and total Level 3 liabilities of \$1.6 billion, before netting of derivative balances.

The valuation techniques used for our Level 3 assets and liabilities, as presented in the previous tables, are described as follows:

- Discounted cash flow – Discounted cash flow valuation techniques generally consist of developing an estimate of future cash flows that are expected to occur over the life of an instrument and then discounting those cash flows at a rate of return that results in the fair value amount.
- Market comparable pricing – Market comparable pricing valuation techniques are used to determine the fair value of certain instruments by incorporating known inputs, such as recent transaction prices, pending transactions, or prices of other similar investments that require significant adjustment to reflect differences in instrument characteristics.
- Option model – Option model valuation techniques are generally used for instruments in which the holder has a contingent right or obligation based on the occurrence of a future event, such as the price of a referenced asset going above or below a predetermined strike price. Option models estimate the likelihood of the specified event occurring by incorporating assumptions such as volatility estimates, price of the underlying instrument and expected rate of return.
- Vendor-priced – Prices obtained from third-party pricing vendors or brokers that are used to record the fair value of the asset or liability for which the related valuation technique and significant unobservable inputs are not provided.

Significant unobservable inputs presented in the previous tables are those we consider significant to the fair value of the Level 3 asset or liability. We consider unobservable inputs to be significant if by their exclusion the fair value of the Level 3 asset or liability would be impacted by a predetermined percentage change. We also consider qualitative factors, such as nature of the instrument, type of valuation technique used, and the significance of the unobservable inputs relative to other inputs used within the valuation. Following is a description of the significant unobservable inputs provided in the table.

- Comparability adjustment – is an adjustment made to observed market data, such as a transaction price in order to reflect dissimilarities in underlying collateral, issuer, rating, or other factors used within a market valuation approach, expressed as a percentage of an observed price.
- Conversion Factor – is the risk-adjusted rate in which a particular instrument may be exchanged for another instrument upon settlement, expressed as a percentage change from a specified rate.
- Correlation factor – is the likelihood of one instrument changing in price relative to another based on an established relationship expressed as a percentage of relative change in price over a period over time.

- Cost to service – is the expected cost per loan of servicing a portfolio of loans, which includes estimates for unreimbursed expenses (including delinquency and foreclosure costs) that may occur as a result of servicing such loan portfolios.
- Credit spread – is the portion of the interest rate in excess of a benchmark interest rate, such as Overnight Index Swap (OIS), LIBOR or U.S. Treasury rates, that when applied to an investment captures changes in the obligor's creditworthiness.
- Default rate – is an estimate of the likelihood of not collecting contractual amounts owed expressed as a constant default rate (CDR).
- Discount rate – is a rate of return used to calculate the present value of the future expected cash flow to arrive at the fair value of an instrument. The discount rate consists of a benchmark rate component and a risk premium component. The benchmark rate component, for example, OIS, LIBOR or U.S. Treasury rates, is generally observable within the market and is necessary to appropriately reflect the time value of money. The risk premium component reflects the amount of compensation market participants require due to the uncertainty inherent in the instruments' cash flows resulting from risks such as credit and liquidity.
- Fall-out factor – is the expected percentage of loans associated with our interest rate lock commitment portfolio that are likely of not funding.
- Initial-value servicing – is the estimated value of the underlying loan, including the value attributable to the embedded servicing right, expressed in basis points of outstanding unpaid principal balance.
- Loss severity – is the estimated percentage of contractual cash flows lost in the event of a default.
- Prepayment rate – is the estimated rate at which forecasted prepayments of principal of the related loan or debt instrument are expected to occur, expressed as a constant prepayment rate (CPR).
- Volatility factor – is the extent of change in price an item is estimated to fluctuate over a specified period of time expressed as a percentage of relative change in price over a period over time.
- Weighted average life – is the weighted average number of years an investment is expected to remain outstanding based on its expected cash flows reflecting the estimated date the issuer will call or extend the maturity of the instrument or otherwise reflecting an estimate of the timing of an instrument's cash flows whose timing is not contractually fixed.

Note 19: Fair Values of Assets and Liabilities (continued)

Significant Recurring Level 3 Fair Value Asset and Liability Input Sensitivity

We generally use discounted cash flow or similar internal modeling techniques to determine the fair value of our Level 3 assets and liabilities. Use of these techniques requires determination of relevant inputs and assumptions, some of which represent significant unobservable inputs as indicated in the preceding tables. Accordingly, changes in these unobservable inputs may have a significant impact on fair value.

Certain of these unobservable inputs will (in isolation) have a directionally consistent impact on the fair value of the instrument for a given change in that input. Alternatively, the fair value of the instrument may move in an opposite direction for a given change in another input. Where multiple inputs are used within the valuation technique of an asset or liability, a change in one input in a certain direction may be offset by an opposite change in another input having a potentially muted impact to the overall fair value of that particular instrument. Additionally, a change in one unobservable input may result in a change to another unobservable input (that is, changes in certain inputs are interrelated to one another), which may counteract or magnify the fair value impact.

SECURITIES, LOANS, MORTGAGE LOANS HELD FOR SALE and NONMARKETABLE EQUITY INVESTMENTS The fair values of predominantly all Level 3 trading securities, MLHFS, loans, other nonmarketable equity investments, and AFS securities have consistent inputs, valuation techniques and correlation to changes in underlying inputs. The internal models used to determine fair value for these Level 3 instruments use certain significant unobservable inputs within a discounted cash flow or market comparable pricing valuation technique. Such inputs include discount rate, prepayment rate, default rate, loss severity, comparability adjustment and weighted average life.

These Level 3 assets would decrease (increase) in value based upon an increase (decrease) in discount rate, default rate, loss severity, or weighted average life inputs and would generally decrease (increase) in value based upon an increase (decrease) in prepayment rate. Generally, a change in the assumption used for default rate is accompanied by a directionally similar change in the risk premium component of the discount rate (specifically, the portion related to credit risk) and a directionally opposite change in the assumption used for prepayment rates. The comparability adjustment input may have a positive or negative impact on fair value depending on the change in fair value the comparability adjustment references. Unobservable inputs for comparability adjustment, loss severity, and weighted average life do not increase or decrease based on movements in the other significant unobservable inputs for these Level 3 assets.

DERIVATIVE INSTRUMENTS Level 3 derivative instruments are valued using market comparable pricing, option pricing and discounted cash flow valuation techniques. We utilize certain unobservable inputs within these techniques to determine the fair value of the Level 3 derivative instruments. The significant unobservable inputs consist of credit spread, a comparability adjustment, prepayment rate, default rate, loss severity, initial-value servicing, fall-out factor, volatility factor, weighted average life, conversion factor, and correlation factor.

Level 3 derivative assets (liabilities) where we are long the underlying would decrease (increase) in value upon an increase (decrease) in default rate, fall-out factor, credit spread, conversion factor, or loss severity inputs. Conversely, Level 3 derivative assets (liabilities) would generally increase (decrease) in value upon an increase (decrease) in prepayment rate, initial-value servicing, weighted average life, or volatility factor inputs. The inverse of the above relationships would occur for instruments in which we are short the underlying. The correlation factor and comparability adjustment inputs may have a positive or negative impact on the fair value of these derivative instruments depending on the change in value of the item the correlation factor and comparability adjustment is referencing. The correlation factor and comparability adjustment are considered independent from movements in other significant unobservable inputs for derivative instruments.

Generally, for derivative instruments for which we are subject to changes in the value of the underlying referenced instrument, a change in the assumption used for default rate is accompanied by directionally similar change in the risk premium component of the discount rate (specifically, the portion related to credit risk) and a directionally opposite change in the assumption used for prepayment rates. Unobservable inputs for loss severity, fall-out factor, initial-value servicing, weighted average life, conversion factor, and volatility do not increase or decrease based on movements in other significant unobservable inputs for these Level 3 instruments.

MORTGAGE SERVICING RIGHTS We use a discounted cash flow valuation technique to determine the fair value of Level 3 MSR. These models utilize certain significant unobservable inputs including prepayment rate, discount rate and costs to service. An increase in any of these unobservable inputs will reduce the fair value of the MSR and alternatively, a decrease in any one of these inputs would result in the MSR increasing in value. Generally, a change in the assumption used for the default rate is accompanied by a directionally similar change in the assumption used for cost to service and a directionally opposite change in the assumption used for prepayment. The sensitivity of our residential MSR is discussed further in Note 10 (Securitizations and Variable Interest Entities).

Assets and Liabilities Recorded at Fair Value on a Nonrecurring Basis

We may be required, from time to time, to measure certain assets at fair value on a nonrecurring basis in accordance with GAAP. These adjustments to fair value usually result from application of LOCOM accounting, write-downs of individual assets or use of the measurement alternative for nonmarketable equity securities.

Table 19.11 provides the fair value hierarchy and fair value at the date of the nonrecurring fair value adjustment for all assets

that were still held as of December 31, 2019 and 2018, and for which a nonrecurring fair value adjustment was recorded during the years then ended.

Table 19.12 presents the increase (decrease) in value of certain assets held at the end of the respective reporting periods presented for which a nonrecurring fair value adjustment was recognized during the periods presented.

Table 19.11: Fair Value on a Nonrecurring Basis

(in millions)	December 31, 2019				December 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Mortgage loans held for sale (1)	\$ —	2,034	3,803	5,837	—	1,213	1,233	2,446
Loans held for sale	—	5	—	5	—	313	—	313
Loans:								
Commercial	—	280	—	280	—	339	—	339
Consumer	—	213	1	214	—	346	1	347
Total loans	—	493	1	494	—	685	1	686
Nonmarketable equity securities	—	1,308	173	1,481	—	774	157	931
Other assets	—	359	27	386	—	149	6	155
Total assets at fair value on a nonrecurring basis	\$ —	4,199	4,004	8,203	—	3,134	1,397	4,531

(1) Consists of commercial mortgages and residential real estate 1-4 family first mortgage loans.

Premises and equipment includes the full impairment of certain capitalized software projects. Other assets includes impairments of operating lease ROU assets, as well as valuation losses on foreclosed real estate and other collateral owned.

Table 19.12: Change in Value of Assets with Nonrecurring Fair Value Adjustment

(in millions)	Year ended December 31,	
	2019	2018
Mortgage loans held for sale	\$ 11	21
Loans held for sale	—	(39)
Loans:		
Commercial	(291)	(221)
Consumer	(207)	(284)
Total loans	(498)	(505)
Nonmarketable equity securities	322	265
Premises and equipment	(170)	—
Other assets	(84)	(40)
Total	\$ (419)	(298)

Note 19: Fair Values of Assets and Liabilities (continued)

Table 19.13 provides quantitative information about the valuation techniques and significant unobservable inputs used in the valuation of substantially all of our Level 3 assets that are measured at fair value on a nonrecurring basis using an internal model. The table is limited to financial instruments that had nonrecurring fair value adjustments during the periods presented.

We have excluded from the table valuation techniques and significant unobservable inputs for certain classes of Level 3

assets we consider both individually and in the aggregate, insignificant relative to our overall Level 3 nonrecurring measurements. We made this determination based upon an evaluation of each class that considered the magnitude of the positions, nature of the unobservable inputs and potential for significant changes in fair value due to changes in those inputs.

Table 19.13: Valuation Techniques – Nonrecurring Basis

(\$ in millions)	Fair Value Level 3	Valuation Technique(s) (1)	Significant Unobservable Inputs (1)	Range of inputs	Weighted Average (2)
December 31, 2019					
Residential mortgage loans held for sale	\$ 3,803 (3)	Discounted cash flow	Default rate (4)	0.3 – 48.3%	4.6%
			Discount rate	1.5 – 9.4	4.3
			Loss severity	0.4 – 100.0	23.4
			Prepayment rate (5)	4.8 – 100.0	23.2
Insignificant Level 3 assets	201				
Total	\$ 4,004				
December 31, 2018					
Residential mortgage loans held for sale	\$ 1,233 (3)	Discounted cash flow	Default rate (4)	0.2 – 2.3%	1.4%
			Discount rate	1.5 – 8.5	4.0
			Loss severity	0.5 – 66.0	1.7
			Prepayment rate (5)	3.5 – 100.0	46.5
Insignificant Level 3 assets	164				
Total	\$ 1,397				

(1) Refer to the narrative following Table 19.10 for a definition of the valuation technique(s) and significant unobservable inputs.

(2) For residential MLHFS, weighted averages are calculated using the outstanding unpaid principal balance of the loans.

(3) Consists of approximately \$1.3 billion and \$1.2 billion of government insured/guaranteed loans purchased from GNMA-guaranteed mortgage securitizations at December 31, 2019 and 2018, respectively, and \$2.5 billion and \$27 million, respectively, of other mortgage loans that are not government insured/guaranteed.

(4) Applies only to non-government insured/guaranteed loans.

(5) Includes the impact on prepayment rate of expected defaults for government insured/guaranteed loans, which impact the frequency and timing of early resolution of loans.

Fair Value Option

The fair value option is an irrevocable election, generally only permitted upon initial recognition of financial assets or liabilities, to measure eligible financial instruments at fair value with changes in fair value reflected in earnings. We may elect the fair value option to align the measurement model with how the financial assets or liabilities are managed or to reduce complexity or accounting asymmetry. Following is a discussion of the portfolios for which we elected the fair value option.

MORTGAGE LOANS HELD FOR SALE (MLHFS) MLHFS measured at fair value include residential mortgage loan originations for which an active secondary market and readily available market prices exist to reliably support our valuations. Loan origination fees on these loans are recorded when earned, and related direct loan origination costs are recognized when incurred. We believe fair value measurement for MLHFS, which we economically hedge with derivatives along with our MSRs measured at fair value, reduces certain timing differences and better matches changes in the value of these assets with changes in the value of derivatives used as economic hedges for these assets.

LOANS HELD FOR SALE (LHFS) We purchase loans for market-making purposes to support the buying and selling demands of our customers. These loans are generally held for a short period of time and managed within parameters of internally approved market risk limits. Fair value measurement best aligns with our risk management practices. Fair value for these loans is generally determined using readily available market data based on recent transaction prices for similar loans.

LOANS Loans measured at fair value consist of reverse mortgage loans previously transferred under a GNMA reverse mortgage securitization program accounted for as a secured borrowing. Before the transfer, they were classified as MLHFS measured at fair value and, as such, continue to be subject to the fair value option.

Table 19.14 reflects differences between the fair value carrying amount of the assets for which we have elected the fair

value option and the contractual aggregate unpaid principal amount at maturity.

Table 19.14: Fair Value Option

(in millions)	December 31, 2019			December 31, 2018		
	Fair value carrying amount	Aggregate unpaid principal	Fair value carrying amount less aggregate unpaid principal	Fair value carrying amount	Aggregate unpaid principal	Fair value carrying amount less aggregate unpaid principal
Mortgage loans held for sale:						
Total loans	\$ 16,606	16,279	327	11,771	11,573	198
Nonaccrual loans	133	157	(24)	127	158	(31)
Loans 90 days or more past due and still accruing	8	10	(2)	7	9	(2)
Loans held for sale:						
Total loans	972	1,020	(48)	1,469	1,536	(67)
Nonaccrual loans	21	29	(8)	21	32	(11)
Loans:						
Total loans	171	201	(30)	244	274	(30)
Nonaccrual loans	129	159	(30)	179	208	(29)

The changes in fair value related to initial measurement and subsequent changes in fair value included in earnings for these assets measured at fair value are shown in Table 19.15 by income

statement line item. Amounts recorded as interest income are excluded from Table 19.15.

Table 19.15: Fair Value Option – Changes in Fair Value Included in Earnings

(in millions)	2019			2018			Year ended December 31, 2017		
	Mortgage banking noninterest income	Net gains (losses) from trading activities	Other noninterest income	Mortgage banking noninterest income	Net gains (losses) from trading activities	Other noninterest income	Mortgage banking noninterest income	Net gains (losses) from trading activities	Other noninterest income
Mortgage loans held for sale	\$ 1,064	—	—	462	—	—	1,229	—	—
Loans held for sale	—	11	2	—	(1)	1	—	45	2
Loans	—	—	—	—	—	(1)	—	—	—

For performing loans, instrument-specific credit risk gains or losses were derived principally by determining the change in fair value of the loans due to changes in the observable or implied credit spread. Credit spread is the market yield on the loans less the relevant risk-free benchmark interest rate. For nonperforming loans, we attribute all changes in fair value to instrument-specific credit risk. Table 19.16 shows the estimated gains and losses from earnings attributable to instrument-specific credit risk related to assets accounted for under the fair value option.

Table 19.16: Fair Value Option – Gains/Losses Attributable to Instrument-Specific Credit Risk

(in millions)	Year ended December 31,		
	2019	2018	2017
Gains (losses) attributable to instrument-specific credit risk:			
Mortgage loans held for sale	\$ 2	(16)	(12)
Loans held for sale	13	—	45
Total	\$ 15	(16)	33

Note 19: Fair Values of Assets and Liabilities (continued)

Disclosures about Fair Value of Financial Instruments

Table 19.17 presents a summary of fair value estimates for financial instruments that are not carried at fair value on a recurring basis. Some financial instruments are excluded from the scope of this table, such as certain insurance contracts and leases. This table also excludes assets and liabilities that are not financial instruments such as the value of the long-term relationships with our deposit, credit card and trust customers, MSRs, premises and equipment, goodwill and deferred taxes.

Loan commitments, standby letters of credit and commercial and similar letters of credit are not included in Table 19.17. A reasonable estimate of the fair value of these instruments is the carrying value of deferred fees plus the allowance for unfunded credit commitments, which totaled \$1.0 billion at both December 31, 2019 and 2018.

The total of the fair value calculations presented does not represent, and should not be construed to represent, the underlying fair value of the Company.

Table 19.17: Fair Value Estimates for Financial Instruments

(in millions)	Carrying amount	Estimated fair value			
		Level 1	Level 2	Level 3	Total
December 31, 2019					
Financial assets					
Cash and due from banks (1)	\$ 21,757	21,757	—	—	21,757
Interest-earning deposits with banks (1)	119,493	119,257	236	—	119,493
Federal funds sold and securities purchased under resale agreements (1)	102,140	—	102,140	—	102,140
Held-to-maturity debt securities	153,933	46,138	109,933	789	156,860
Mortgage loans held for sale	6,736	—	2,939	4,721	7,660
Loans held for sale	5	—	5	—	5
Loans, net (2)	933,042	—	54,125	891,714	945,839
Nonmarketable equity securities (cost method)	4,790	—	—	4,823	4,823
Total financial assets	\$ 1,341,896	187,152	269,378	902,047	1,358,577
Financial liabilities					
Deposits (3)	\$ 118,849	—	87,279	31,858	119,137
Short-term borrowings	104,512	—	104,513	—	104,513
Long-term debt (4)	228,159	—	231,332	1,720	233,052
Total financial liabilities	\$ 451,520	—	423,124	33,578	456,702
December 31, 2018					
Financial assets					
Cash and due from banks (1)	\$ 23,551	23,551	—	—	23,551
Interest-earning deposits with banks (1)	149,736	149,542	194	—	149,736
Federal funds sold and securities purchased under resale agreements (1)	80,207	—	80,207	—	80,207
Held-to-maturity debt securities	144,788	44,339	97,275	501	142,115
Mortgage loans held for sale	3,355	—	2,129	1,233	3,362
Loans held for sale	572	—	572	—	572
Loans, net (2)	923,703	—	45,190	872,725	917,915
Nonmarketable equity securities (cost method)	5,643	—	—	5,675	5,675
Total financial assets	\$ 1,331,555	217,432	225,567	880,134	1,323,133
Financial liabilities					
Deposits (3)	\$ 130,645	—	107,448	22,641	130,089
Short-term borrowings	105,787	—	105,789	—	105,789
Long-term debt (4)	229,008	—	225,904	2,230	228,134
Total financial liabilities	\$ 465,440	—	439,141	24,871	464,012

(1) Amounts consist of financial instruments for which carrying value approximates fair value.

(2) Excludes lease financing with a carrying amount of \$19.5 billion and \$19.7 billion at December 31, 2019 and 2018, respectively.

(3) Excludes deposit liabilities with no defined or contractual maturity of \$1.2 trillion at both December 31, 2019 and 2018.

(4) Excludes capital lease obligations under capital leases of \$32 million and \$36 million at December 31, 2019 and 2018, respectively.

Note 20: Preferred Stock

We are authorized to issue 20 million shares of preferred stock and 4 million shares of preference stock, both without par value. Preferred shares outstanding rank senior to common shares both as to dividends and liquidation preference but have no general voting rights. We have not issued any preference shares under this authorization. If issued, preference shares would be limited to one vote per share. Our total authorized, issued and outstanding preferred stock is presented in the following two

tables along with the Employee Stock Ownership Plan (ESOP) Cumulative Convertible Preferred Stock.

In January 2020, we issued \$2.0 billion of our Preferred Stock, Series Z. On February 12, 2020, the Company announced a redemption of the remaining outstanding shares of our Preferred Stock, Series K, and a partial redemption of 26,720 outstanding shares of our Preferred Stock, Series T. The redemptions will occur on March 16, 2020.

Table 20.1: Preferred Stock Shares

	December 31, 2019		December 31, 2018	
	Liquidation preference per share	Shares authorized and designated	Liquidation preference per share	Shares authorized and designated
DEP Shares				
Dividend Equalization Preferred Shares (DEP)	\$ 10	97,000	\$ 10	97,000
Series I				
Floating Class A Preferred Stock (1)	100,000	25,010	100,000	25,010
Series K				
Floating Non-Cumulative Perpetual Class A Preferred Stock (2)(3)	1,000	3,500,000	1,000	3,500,000
Series L				
7.50% Non-Cumulative Perpetual Convertible Class A Preferred Stock (4)	1,000	4,025,000	1,000	4,025,000
Series N				
5.20% Non-Cumulative Perpetual Class A Preferred Stock	25,000	30,000	25,000	30,000
Series O				
5.125% Non-Cumulative Perpetual Class A Preferred Stock	25,000	27,600	25,000	27,600
Series P				
5.25% Non-Cumulative Perpetual Class A Preferred Stock	25,000	26,400	25,000	26,400
Series Q				
5.85% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	69,000	25,000	69,000
Series R				
6.625% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	34,500	25,000	34,500
Series S				
5.90% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	80,000	25,000	80,000
Series T				
6.00% Non-Cumulative Perpetual Class A Preferred Stock	25,000	32,200	25,000	32,200
Series U				
5.875% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	80,000	25,000	80,000
Series V				
6.00% Non-Cumulative Perpetual Class A Preferred Stock	25,000	40,000	25,000	40,000
Series W				
5.70% Non-Cumulative Perpetual Class A Preferred Stock	25,000	40,000	25,000	40,000
Series X				
5.50% Non-Cumulative Perpetual Class A Preferred Stock	25,000	46,000	25,000	46,000
Series Y				
5.625% Non-Cumulative Perpetual Class A Preferred Stock	25,000	27,600	25,000	27,600
ESOP				
Cumulative Convertible Preferred Stock (5)	—	1,071,418	—	1,406,460
Total		9,251,728		9,586,770

- (1) Series I preferred stock issuance relates to trust preferred securities. See Note 10 (Securitizations and Variable Interest Entities) for additional information. This issuance has a floating interest rate that is the greater of three-month LIBOR plus 0.93% and 5.56975%.
- (2) Floating rate for Preferred Stock, Series K, is three-month LIBOR plus 3.77%.
- (3) In third quarter 2019, 1,550,000 shares of Preferred Stock, Series K, were redeemed.
- (4) Preferred Stock, Series L, may be converted at any time, at the option of the holder, into 6.3814 shares of our common stock, plus cash in lieu of fractional shares, subject to anti-dilution adjustments.
- (5) See the ESOP Cumulative Convertible Preferred Stock section in this Note for additional information about the liquidation preference for the ESOP Cumulative Convertible Preferred Stock.

Note 20: Preferred Stock (continued)

Table 20.2: Preferred Stock – Shares Issued and Carrying Value

(in millions, except shares)	December 31, 2019				December 31, 2018			
	Shares issued and outstanding	Liquidation preference value	Carrying value	Discount	Shares issued and outstanding	Liquidation preference value	Carrying value	Discount
DEP Shares								
Dividend Equalization Preferred Shares (DEP)	96,546	\$ —	—	—	96,546	\$ —	—	—
Series I (1)(2)								
Floating Class A Preferred Stock	25,010	2,501	2,501	—	25,010	2,501	2,501	—
Series K (1)(3)(4)								
Floating Non-Cumulative Perpetual Class A Preferred Stock	1,802,000	1,802	1,546	256	3,352,000	3,352	2,876	476
Series L (1)(5)								
7.50% Non-Cumulative Perpetual Convertible Class A Preferred Stock	3,967,995	3,968	3,200	768	3,968,000	3,968	3,200	768
Series N (1)								
5.20% Non-Cumulative Perpetual Class A Preferred Stock	30,000	750	750	—	30,000	750	750	—
Series O (1)								
5.125% Non-Cumulative Perpetual Class A Preferred Stock	26,000	650	650	—	26,000	650	650	—
Series P (1)								
5.25% Non-Cumulative Perpetual Class A Preferred Stock	25,000	625	625	—	25,000	625	625	—
Series Q (1)								
5.85% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	69,000	1,725	1,725	—	69,000	1,725	1,725	—
Series R (1)								
6.625% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	33,600	840	840	—	33,600	840	840	—
Series S (1)								
5.90% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	80,000	2,000	2,000	—	80,000	2,000	2,000	—
Series T (1)								
6.00% Non-Cumulative Perpetual Class A Preferred Stock	32,000	800	800	—	32,000	800	800	—
Series U (1)								
5.875% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	80,000	2,000	2,000	—	80,000	2,000	2,000	—
Series V (1)								
6.00% Non-Cumulative Perpetual Class A Preferred Stock	40,000	1,000	1,000	—	40,000	1,000	1,000	—
Series W (1)								
5.70% Non-Cumulative Perpetual Class A Preferred Stock	40,000	1,000	1,000	—	40,000	1,000	1,000	—
Series X (1)								
5.50% Non-Cumulative Perpetual Class A Preferred Stock	46,000	1,150	1,150	—	46,000	1,150	1,150	—
Series Y (1)								
5.625% Non-Cumulative Perpetual Class A Preferred Stock	27,600	690	690	—	27,600	690	690	—
ESOP								
Cumulative Convertible Preferred Stock	1,071,418	1,072	1,072	—	1,406,460	1,407	1,407	—
Total	7,492,169	\$ 22,573	21,549	1,024	9,377,216	\$ 24,458	23,214	1,244

(1) Preferred shares qualify as Tier 1 capital.

(2) Floating rate for Preferred Stock, Series I, is the greater of three-month LIBOR plus 0.93% and 5.56975%.

(3) Floating rate for Preferred Stock, Series K, is three-month LIBOR plus 3.77%.

(4) In third quarter 2019, 1,550,000 shares of Preferred Stock, Series K, were redeemed.

(5) Preferred Stock, Series L, may be converted at any time, at the option of the holder, into 6.3814 shares of our common stock, plus cash in lieu of fractional shares, subject to anti-dilution adjustments.

ESOP CUMULATIVE CONVERTIBLE PREFERRED STOCK All shares of our ESOP Cumulative Convertible Preferred Stock (ESOP Preferred Stock) were issued to a trustee acting on behalf of the Wells Fargo & Company 401(k) Plan (the 401(k) Plan). Dividends on the ESOP Preferred Stock are cumulative from the date of initial issuance and are payable quarterly at annual rates based upon the year of issuance. Each share of ESOP Preferred Stock released from the unallocated reserve of the 401(k) Plan is converted into shares of our common stock based on the stated

value of the ESOP Preferred Stock and the then current market price of our common stock. The ESOP Preferred Stock is also convertible at the option of the holder at any time, unless previously redeemed. We have the option to redeem the ESOP Preferred Stock at any time, in whole or in part, at a redemption price per share equal to the higher of (a) \$1,000 per share plus accrued and unpaid dividends or (b) the fair market value, as defined in the Certificates of Designation for the ESOP Preferred Stock.

Table 20.3: ESOP Preferred Stock

(in millions, except shares)	Shares issued and outstanding		Carrying value		Adjustable dividend rate	
	Dec 31, 2019	Dec 31, 2018	Dec 31, 2019	Dec 31, 2018	Minimum	Maximum
ESOP Preferred Stock						
\$1,000 liquidation preference per share						
2018	254,945	336,945	\$ 255	337	7.00%	8.00%
2017	192,210	222,210	192	222	7.00	8.00
2016	197,450	233,835	198	234	9.30	10.30
2015	116,784	144,338	117	144	8.90	9.90
2014	136,151	174,151	136	174	8.70	9.70
2013	97,948	133,948	98	134	8.50	9.50
2012	49,134	77,634	49	78	10.00	11.00
2011	26,796	61,796	27	62	9.00	10.00
2010 (1)	—	21,603	—	22	9.50	10.50
Total ESOP Preferred Stock (2)	1,071,418	1,406,460	\$ 1,072	1,407		
Unearned ESOP shares (3)			\$ (1,143)	(1,502)		

(1) In April 2019, all of the 2010 ESOP Preferred Stock was converted into common stock.

(2) At December 31, 2019 and 2018, additional paid-in capital included \$71 million and \$95 million, respectively, related to ESOP preferred stock.

(3) We recorded a corresponding charge to unearned ESOP shares in connection with the issuance of the ESOP Preferred Stock. The unearned ESOP shares are reduced as shares of the ESOP Preferred Stock are committed to be released.

Note 21: Common Stock and Stock Plans

Common Stock

Table 21.1 presents our reserved, issued and authorized shares of common stock at December 31, 2019.

Table 21.1: Common Stock Shares

	Number of shares
Dividend reinvestment and common stock purchase plans	6,774,855
Director plans	375,293
Stock plans (1)	488,214,122
Convertible securities and warrants	65,835,437
Total shares reserved	561,199,707
Shares issued	5,481,811,474
Shares not reserved or issued	2,956,988,819
Total shares authorized	9,000,000,000

(1) Includes employee restricted share rights, performance share awards, 401(k), and deferred compensation plans.

In connection with our participation in the Capital Purchase Program (CPP), a part of the Troubled Asset Relief Program (TARP), we issued to the U.S. Treasury Department warrants to purchase 110,261,688 shares of our common stock with an original exercise price of \$34.01 per share. The warrants expired on October 29, 2018, and the holders of 110,646 unexercised warrants as of the expiration date are no longer entitled to receive any shares of our common stock. Holders exercised no warrants and 23,217,208 warrants to purchase shares of our common stock in 2019 and 2018, respectively.

Dividend Reinvestment and Common Stock Purchase Plans

Participants in our dividend reinvestment and common stock direct purchase plans may purchase shares of our common stock at fair market value by reinvesting dividends and/or making optional cash payments under the plan's terms.

Employee Stock Plans

We offer stock-based employee compensation plans as described below. For information on our accounting for stock-based compensation plans, see Note 1 (Summary of Significant Accounting Policies).

LONG-TERM INCENTIVE COMPENSATION PLANS Since 2010, we have granted restricted share rights (RSRs) and performance share awards (PSAs) as our primary long-term incentive awards using our Long-Term Incentive Compensation Plan (LTICP).

Holders of RSRs and PSAs may be entitled to receive additional RSRs and PSAs (dividend equivalents) or cash payments equal to the cash dividends that would have been paid had the RSRs or PSAs been issued and outstanding shares of common stock. RSRs and PSAs granted as dividend equivalents are subject to the same vesting schedule and conditions as the underlying award.

Table 21.2 summarizes the major components of stock incentive compensation expense and the related recognized tax benefit.

Table 21.2: Stock Incentive Compensation Expense

(in millions)	Year ended December 31,		
	2019	2018	2017
RSRs (1)	\$ 1,109	1,013	743
Performance shares	108	9	112
Stock options	—	—	(6)
Total stock incentive compensation expense	\$ 1,217	1,022	849
Related recognized tax benefit	\$ 301	252	320

(1) In February 2018, a total of 11.9 million RSRs were granted to all eligible team members in the U.S., and eligible team members outside the U.S., referred to as broad-based RSRs.

For various acquisitions and mergers, we converted employee and director stock options of acquired or merged companies into stock options to purchase our common stock based on the terms of the original stock option plan and the agreed-upon exchange ratio. In addition, we converted restricted stock awards into awards that entitle holders to our stock after the vesting conditions are met. Holders receive cash dividends on outstanding awards if provided in the original award.

The total number of shares of common stock available for grant under the plans at December 31, 2019, was 246 million.

Director Awards

Beginning in 2011, we granted only common stock awards under the LTICP to non-employee directors elected or re-elected at the annual meeting of stockholders and prorated awards to directors who join the Board at any other time. Stock awards vest immediately. Options also were granted to directors prior to 2011 and can be exercised after 12 months through the tenth anniversary of the grant date.

Restricted Share Rights

Holders of RSRs are entitled to the related shares of common stock at no cost generally vesting over three to five years after the RSRs are granted. A summary of the status of our RSRs at December 31, 2019, and changes during 2019 is presented in Table 21.3.

Table 21.3: Restricted Share Rights

	Number	Weighted-average grant-date fair value
Nonvested at January 1, 2019	45,572,498	\$ 54.85
Granted	22,743,879	49.32
Vested	(15,281,949)	55.03
Canceled or forfeited	(2,118,967)	55.37
Nonvested at December 31, 2019	50,915,461	52.30

The weighted-average grant date fair value of RSRs granted during 2018 and 2017 was \$58.47 and \$57.54, respectively.

At December 31, 2019, there was \$1.0 billion of total unrecognized compensation cost related to nonvested RSRs. The cost is expected to be recognized over a weighted-average period of 2.4 years. The total fair value of RSRs that vested during 2019, 2018 and 2017 was \$773 million, \$824 million and \$865 million, respectively.

Performance Share Awards

Holders of PSAs are entitled to the related shares of common stock at no cost subject to the Company's achievement of specified performance criteria over a three-year period. PSAs are granted at a target number based on the Company's performance. The number of awards that vest can be adjusted downward to zero and upward to a maximum of either 125% or 150% of target. The awards vest in the quarter after the end of the performance period. For PSAs whose performance period ended December 31, 2019, the determination of the number of performance shares that will vest will occur in first quarter of 2020 after review of the Company's performance by the Human Resources Committee of the Board.

A summary of the status of our PSAs at December 31, 2019, and changes during 2019 is in Table 21.4, based on the performance adjustments recognized as of December 2019.

Table 21.4: Performance Share Awards

	Number	Weighted- average grant-date fair value (1)
Nonvested at January 1, 2019	5,984,686	\$ 49.91
Granted	2,320,530	49.26
Vested	(1,610,502)	48.59
Canceled or forfeited	(190,501)	56.48
Nonvested at December 31, 2019	6,504,213	49.81

(1) Reflects approval date fair value for grants subject to variable accounting.

Table 21.5: Stock Option Activity

	Number	Weighted- average exercise price	Weighted- average remaining contractual term (in yrs.)	Aggregate intrinsic value (in millions)
Incentive compensation plans				
Options outstanding as of December 31, 2018	8,343,157	\$ 13.46		
Canceled or forfeited	(170,141)	13.05		
Exercised	(8,112,456)	13.34		
Options exercisable and outstanding as of December 31, 2019	60,560	30.69	0.3	\$ 1

The total intrinsic value to option holders, which is the stock market value in excess of the option exercise price, of options exercised during 2019, 2018 and 2017 was \$291 million, \$375 million and \$623 million, respectively.

Cash received from the exercise of stock options for 2019, 2018 and 2017 was \$108 million, \$227 million and \$602 million, respectively.

We do not have a specific policy on repurchasing shares to satisfy share option exercises. Rather, we have a general policy on repurchasing shares to meet common stock issuance requirements for our benefit plans (including share option exercises), conversion of our convertible securities, acquisitions and other corporate purposes. Various factors determine the amount and timing of our share repurchases, including our capital requirements, the number of shares we expect to issue for acquisitions and employee benefit plans, market conditions (including the trading price of our stock), and regulatory and legal considerations. These factors can change at any time, and there can be no assurance as to the number of shares we will repurchase or when we will repurchase them.

The weighted-average grant date fair value of performance awards granted during 2018 and 2017 was \$58.62 and \$57.14, respectively.

At December 31, 2019, there was \$29 million of total unrecognized compensation cost related to nonvested performance awards. The cost is expected to be recognized over a weighted-average period of 1.6 years. The total fair value of PSAs that vested during 2019, 2018 and 2017 was \$82 million, \$107 million and \$117 million, respectively.

Stock Options

Table 21.5 summarizes stock option activity and related information for the stock plans. Options assumed in mergers are included in the activity and related information for Incentive Compensation Plans if originally issued under an employee plan, and in the activity and related information for Director Awards if originally issued under a director plan.

Note 21: Common Stock and Stock Plans (continued)

Employee Stock Ownership Plan

The Wells Fargo & Company 401(k) Plan (401(k) Plan) is a defined contribution plan with an Employee Stock Ownership Plan (ESOP) feature. The ESOP feature enables the 401(k) Plan to borrow money to purchase our preferred or common stock. From 1994 through 2019, with the exception of 2009, we loaned money to the 401(k) Plan to purchase shares of our ESOP preferred stock. As our employer contributions are made to the 401(k) Plan and are used to make ESOP loan payments, the ESOP preferred stock in the 401(k) Plan is released and converted into our common stock shares. Dividends on the common stock shares allocated as a result of the release and conversion of the ESOP preferred stock reduce retained earnings, and the shares are considered outstanding for computing earnings per share. Dividends on the unallocated

ESOP preferred stock do not reduce retained earnings, and the shares are not considered to be common stock equivalents for computing earnings per share. Loan principal and interest payments are made from our employer contributions to the 401(k) Plan, along with dividends paid on the ESOP preferred stock. With each principal and interest payment, a portion of the ESOP preferred stock is released and converted to common stock shares, which are allocated to the 401(k) Plan participants and invested in the Wells Fargo ESOP Fund within the 401(k) Plan.

Table 21.6 presents the balance of common stock and unreleased preferred stock held in the Wells Fargo ESOP fund, the fair value of unreleased ESOP preferred stock and the dividends on allocated shares of common stock and unreleased ESOP Preferred Stock paid to the 401(k) Plan.

Table 21.6: Common Stock and Unreleased Preferred Stock in the Wells Fargo ESOP Fund

(in millions, except shares)	Shares outstanding		
	December 31,		
	2019	2018	2017
Allocated shares (common)	138,978,383	138,182,911	124,670,717
Unreleased shares (preferred)	1,071,418	1,406,460	1,556,104
Fair value of unreleased ESOP preferred shares	\$ 1,072	1,407	1,556

	Dividends paid		
	Year ended December 31,		
	2019	2018	2017
Allocated shares (common)	\$ 233	213	195
Unreleased shares (preferred)	101	159	166

Note 22: Revenue from Contracts with Customers (continued)

(continued from previous page)

	Year ended December 31, 2017				
	Community Banking	Wholesale Banking	Wealth and Investment Management	Other	Consolidated Company
Net interest income (1)	\$ 28,658	18,810	4,641	(2,552)	49,557
Noninterest income:					
Service charges on deposit accounts	2,909	2,201	17	(16)	5,111
Trust and investment fees:					
Brokerage advisory, commissions and other fees	1,830	304	9,072	(1,848)	9,358
Trust and investment management	889	523	2,877	(917)	3,372
Investment banking	(59)	1,827	(2)	(1)	1,765
Total trust and investment fees	2,660	2,654	11,947	(2,766)	14,495
Card fees	3,613	345	6	(4)	3,960
Other fees:					
Lending related charges and fees (1)(2)	311	1,257	8	(8)	1,568
Cash network fees	498	8	—	—	506
Commercial real estate brokerage commissions	1	461	—	—	462
Wire transfer and other remittance fees	239	204	9	(4)	448
All other fees (1)	448	124	1	—	573
Total other fees	1,497	2,054	18	(12)	3,557
Mortgage banking (1)	3,895	458	(10)	7	4,350
Insurance (1)	139	872	88	(50)	1,049
Net gains (losses) from trading activities (1)	(251)	701	92	—	542
Net gains (losses) on debt securities (1)	709	(232)	2	—	479
Net gains (losses) from equity securities (1)	1,455	116	208	—	1,779
Lease income (1)	—	1,907	—	—	1,907
Other income of the segment (1)	1,734	114	63	(308)	1,603
Total noninterest income	18,360	11,190	12,431	(3,149)	38,832
Revenue	\$ 47,018	30,000	17,072	(5,701)	88,389

- (1) Most of our revenue is not within the scope of Accounting Standards Update (ASU) 2014-09 – *Revenue from Contracts with Customers*, and additional details are included in other notes to our financial statements. The scope explicitly excludes net interest income as well as many other revenues for financial assets and liabilities, including loans, leases, securities, and derivatives.
- (2) Represents combined amount of previously reported "Charges and fees on loans" and "Letters of credit fees."

We provide services to customers which have related performance obligations that we complete to recognize revenue. Our revenues are generally recognized either immediately upon the completion of our service or over time as we perform services. Any services performed over time generally require that we render services each period and therefore we measure our progress in completing these services based upon the passage of time.

SERVICE CHARGES ON DEPOSIT ACCOUNTS are earned on depository accounts for commercial and consumer customers

and include fees for account and overdraft services. Account charges include fees for periodic account maintenance activities and event-driven services such as stop payment fees. Our obligation for event-driven services is satisfied at the time of the event when the service is delivered, while our obligation for maintenance services is satisfied over the course of each month. Our obligation for overdraft services is satisfied at the time of the overdraft.

Table 22.2 presents our service charges on deposit accounts by operating segment.

Table 22.2: Service Charges on Deposit Accounts by Operating Segment

	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
(in millions)	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Overdraft fees	\$ 1,965	1,776	1,941	5	5	6	1	1	1	—	—	—	1,971	1,782	1,948
Account charges	858	865	968	1,969	2,069	2,195	15	15	16	(15)	(15)	(16)	2,827	2,934	3,163
Service charges on deposit accounts	\$ 2,823	2,641	2,909	1,974	2,074	2,201	16	16	17	(15)	(15)	(16)	4,798	4,716	5,111

BROKERAGE ADVISORY, COMMISSIONS AND OTHER FEES are earned for providing full-service and discount brokerage services predominantly to retail brokerage clients. These revenues include fees earned on asset-based and transactional accounts and other brokerage advisory services.

Asset-based revenues are charged based on the market value of the client's assets. The services and related obligations associated with certain of these revenues, which include investment advice, active management of client assets, or assistance with selecting and engaging a third-party advisory manager, are generally satisfied over a month or quarter. The remaining revenues include trailing commissions which are earned for selling shares to investors. Our obligation associated with earning trailing commissions is satisfied at the time shares

are sold. However, these fees are received and recognized over time during the period the customer owns the shares and we remain the broker of record. The amount of trailing commissions is variable based on the length of time the customer holds the shares and on changes in the value of the underlying assets.

Transactional revenues are earned for executing transactions at the client's direction. Our obligation is generally satisfied upon the execution of the transaction and the fees are based on the size and number of transactions executed.

Other revenues earned from other brokerage advisory services include omnibus and networking fees received from mutual fund companies in return for providing record keeping and other administrative services, and annual account maintenance fees charged to customers.

Table 22.3 presents our brokerage advisory, commissions and other fees by operating segment.

Table 22.3: Brokerage Advisory, Commissions and Other Fees by Operating Segment

(in millions)	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Asset-based revenue (1)	\$ 1,478	1,482	1,372	—	1	1	6,777	6,899	6,630	(1,480)	(1,484)	(1,371)	6,775	6,898	6,632
Transactional revenue	383	340	382	26	70	40	1,534	1,618	1,802	(383)	(380)	(400)	1,560	1,648	1,824
Other revenue	70	65	76	266	246	263	635	644	640	(69)	(65)	(77)	902	890	902
Brokerage advisory, commissions and other fees	\$ 1,931	1,887	1,830	292	317	304	8,946	9,161	9,072	(1,932)	(1,929)	(1,848)	9,237	9,436	9,358

(1) We earned trailing commissions of \$1.2 billion for the year ended December 31, 2019 and \$1.3 billion for both of the years ended December 31, 2018 and 2017, respectively.

TRUST AND INVESTMENT MANAGEMENT FEES are earned for providing trust, investment management and other related services.

Investment management services include managing and administering assets, including mutual funds, and institutional separate accounts. Fees for these services are generally determined based on a tiered scale relative to the market value of assets under management (AUM). In addition to AUM, we have client assets under administration (AUA) that earn various administrative fees which are generally based on the extent of the services provided to administer the account. Services with

AUM and AUA-based fees are generally performed over time.

Trust services include acting as a trustee or agent for corporate trust, personal trust, and agency assets. Obligations for trust services are generally satisfied over time, while obligations for activities that are transactional in nature are satisfied at the time of the transaction.

Other related services include the custody and safekeeping of accounts. Our obligation for these services is generally satisfied over time.

Table 22.4 presents our trust and investment management fees by operating segment.

Table 22.4: Trust and Investment Management Fees by Operating Segment

(in millions)	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Investment management fees	\$ —	—	1	—	—	—	1,990	2,087	2,053	—	—	—	1,990	2,087	2,054
Trust fees	804	908	887	338	329	421	557	728	757	(840)	(932)	(916)	859	1,033	1,149
Other revenue	1	2	1	148	116	102	40	78	67	—	—	(1)	189	196	169
Trust and investment management fees	\$ 805	910	889	486	445	523	2,587	2,893	2,877	(840)	(932)	(917)	3,038	3,316	3,372

INVESTMENT BANKING FEES are earned for underwriting debt and equity securities, arranging loan syndications and performing other advisory services. Our obligation for these services is generally satisfied at closing of the transaction. Substantially all of these fees are in the Wholesale Banking operating segment.

CARD FEES include credit and debit card interchange and network revenues and various card-related fees. Credit and debit card

interchange and network revenues are earned on credit and debit card transactions conducted through payment networks such as Visa, MasterCard, and American Express. Our obligation is satisfied concurrently with the delivery of services on a daily basis.

Table 22.5 presents our card fees by operating segment.

Table 22.5: Card Fees by Operating Segment

(in millions)	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Credit card interchange and network revenues (1)	\$ 809	792	944	359	361	345	6	6	6	(4)	(4)	(4)	1,170	1,155	1,291
Debit card interchange and network revenues	2,148	2,053	1,964	—	—	—	—	—	—	—	—	—	2,148	2,053	1,964
Late fees, cash advance fees, balance transfer fees, and annual fees	698	698	705	—	1	—	—	—	—	—	—	—	698	699	705
Card fees	\$ 3,655	3,543	3,613	359	362	345	6	6	6	(4)	(4)	(4)	4,016	3,907	3,960

(1) The cost of credit card rewards and rebates of \$1.5 billion, \$1.4 billion and \$1.2 billion for the years ended December 31, 2019, 2018 and 2017, respectively, are presented net against the related revenues.

Note 22: Revenue from Contracts with Customers (continued)

CASH NETWORK FEES are earned for processing ATM transactions. Our obligation is completed daily upon settlement of ATM transactions. Substantially all of these fees are in the Community Banking operating segment.

COMMERCIAL REAL ESTATE BROKERAGE COMMISSIONS are earned for assisting customers in the sale of real estate property. Our obligation is satisfied upon the successful brokering of a transaction. Fees are based on a fixed percentage of the sales price. All of these fees are in the Wholesale Banking operating segment. In October 2019, we sold our commercial real estate brokerage business (Eastdil).

WIRE TRANSFER AND OTHER REMITTANCE FEES consist of fees earned for funds transfer services and issuing cashier's checks and money orders. Our obligation is satisfied at the time of the funds transfer services or upon issuance of the cashier's check or money order. Substantially all of these fees are in the Community Banking and Wholesale Banking operating segments.

ALL OTHER FEES include various types of fees for products or services such as merchant payment services, safe deposit boxes, and loan syndication agency services. These fees are generally recognized over time as we perform the services. Most of these fees are in the Community Banking operating segment.

Note 23: Employee Benefits and Other Expenses

Pension and Postretirement Plans

We sponsor a frozen noncontributory qualified defined benefit retirement plan, the Wells Fargo & Company Cash Balance Plan (Cash Balance Plan), which covers eligible employees of Wells Fargo. The Cash Balance Plan was frozen on July 1, 2009, and no new benefits accrue after that date.

Prior to July 1, 2009, eligible employees' Cash Balance Plan accounts were allocated a compensation credit based on a percentage of their certified compensation; the freeze discontinued the allocation of compensation credits after June 30, 2009. Investment credits continue to be allocated to participants' accounts based on their accumulated balances.

Although not required, we made a \$192 million contribution to our Cash Balance Plan in 2019. We do not expect that we will be required to make a contribution to the Cash Balance Plan in 2020; however, this is dependent on the finalization of the actuarial valuation in 2020. Our decision of whether to make a contribution in 2020 will be based on various factors including the actual investment performance of plan assets during 2020. Given these uncertainties, we cannot estimate at this time the amount, if any, that we will contribute in 2020 to the Cash Balance Plan. For the nonqualified pension plans and postretirement benefit plans, there is no minimum required contribution beyond the amount needed to fund benefit payments.

We recognize settlement losses for our Cash Balance Plan based on assessing whether lump sum payments will, in aggregate for the year, exceed the sum of its annual service and interest cost (threshold). Lump sum payments (included in the "Benefits paid" line in Table 23.1) did not exceed this threshold in 2019. Settlement losses of \$134 million were recognized in 2018 representing the pro rata portion of the net loss in cumulative other comprehensive income based on the percentage reduction in the Cash Balance Plan's projected benefit obligation attributable to 2018 lump sum payments.

Our nonqualified defined benefit plans are unfunded and provide supplemental defined benefit pension benefits to certain eligible employees. The benefits under these plans were frozen in prior years.

We provide health care and life insurance benefits for certain retired employees, and we reserve the right to amend, modify or terminate any of the benefits at any time.

The information set forth in the following tables is based on current actuarial reports using the measurement date of December 31 for our pension and postretirement benefit plans.

Table 23.1 presents the changes in the benefit obligation and the fair value of plan assets, the funded status, and the amounts recognized on the balance sheet. The increases in the benefit obligation of the qualified plans and nonqualified plans were primarily due to actuarial losses, reflecting a decrease in the discount rates, partially offset by benefits paid. The decrease in

the benefit obligation for the other benefit plans was primarily due to benefits paid (net of participant contributions) and net actuarial gains, partially offset by interest cost. Net actuarial gains were primarily due to actual benefit claims being less than projected, partially offset by a decrease in the discount rate.

Table 23.1: Changes in Benefit Obligation and Fair Value of Plan Assets

(in millions)	December 31, 2019			December 31, 2018		
	Pension benefits		Other benefits	Pension benefits		
	Qualified	Non-qualified		Qualified	Non-qualified	Other benefits
Change in benefit obligation:						
Benefit obligation at beginning of year	\$ 10,129	557	555	11,110	621	611
Service cost	11	—	—	11	—	—
Interest cost	419	22	23	392	21	21
Plan participants' contributions	—	—	44	—	—	48
Actuarial loss (gain)	1,229	49	(11)	(674)	(27)	(33)
Benefits paid	(672)	(57)	(86)	(719)	(57)	(92)
Medicare Part D subsidy	—	—	—	—	—	2
Settlements, Curtailments, and Amendments	(2)	—	—	1	—	—
Other	—	—	—	13	—	—
Foreign exchange impact	2	1	—	(5)	(1)	(2)
Benefit obligation at end of year	11,116	572	525	10,129	557	555
Change in plan assets:						
Fair value of plan assets at beginning of year	9,477	—	511	10,667	—	565
Actual return on plan assets	1,758	—	64	(478)	—	(17)
Employer contribution	199	57	7	10	57	5
Plan participants' contributions	—	—	44	—	—	48
Benefits paid	(672)	(57)	(86)	(719)	(57)	(92)
Medicare Part D subsidy	—	—	—	—	—	2
Settlement	(1)	—	—	—	—	—
Other	—	—	—	1	—	—
Foreign exchange impact	2	—	—	(4)	—	—
Fair value of plan assets at end of year	10,763	—	540	9,477	—	511
Funded status at end of year	\$ (353)	(572)	15	(652)	(557)	(44)
Amounts recognized on the balance sheet at end of year:						
Assets	\$ 1	—	44	1	—	—
Liabilities	(354)	(572)	(29)	(653)	(557)	(44)

Table 23.2 provides information for pension and post retirement plans with benefit obligations in excess of plan assets.

Table 23.2: Plans with Benefit Obligations in Excess of Plan Assets

(in millions)	December 31, 2019		December 31, 2018	
	Pension Benefits	Other Benefits	Pension Benefits	Other Benefits
Projected benefit obligation	\$ 11,653	N/A	10,640	N/A
Accumulated benefit obligation	11,634	29	10,627	555
Fair value of plan assets	10,727	—	9,429	511

Note 23: Employee Benefits and Other Expenses (continued)

Table 23.3 presents the components of net periodic benefit cost and other comprehensive income (OCI).

Table 23.3: Net Periodic Benefit Cost and Other Comprehensive Income

(in millions)	December 31, 2019			December 31, 2018			December 31, 2017		
	Pension benefits			Pension benefits			Pension benefits		
	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Service cost	\$ 11	—	—	11	—	—	5	—	—
Interest cost (1)	419	22	23	392	21	21	412	24	28
Expected return on plan assets (1)	(567)	—	(28)	(641)	—	(31)	(652)	—	(30)
Amortization of net actuarial loss (gain) (1)	148	10	(17)	131	14	(18)	148	11	(9)
Amortization of prior service credit (1)	—	—	(10)	—	—	(10)	—	—	(10)
Settlement loss (1)	—	2	—	134	2	—	7	6	—
Net periodic benefit cost	11	34	(32)	27	37	(38)	(80)	41	(21)
Other changes in plan assets and benefit obligations recognized in other comprehensive income:									
Net actuarial loss (gain)	38	49	(47)	445	(27)	15	33	46	(128)
Amortization of net actuarial gain (loss)	(148)	(10)	17	(131)	(14)	18	(148)	(11)	9
Prior service cost	—	—	—	1	—	—	1	—	—
Amortization of prior service credit	—	—	10	—	—	10	—	—	10
Settlement	—	(2)	—	(134)	(2)	—	(8)	(6)	—
Total recognized in other comprehensive income	(110)	37	(20)	181	(43)	43	(122)	29	(109)
Total recognized in net periodic benefit cost and other comprehensive income	\$ (99)	71	(52)	208	(6)	5	(202)	70	(130)

(1) Effective January 1, 2018, we adopted ASU 2017-07 – *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. Accordingly, 2019 and 2018 balances are reported in other noninterest expense on the consolidated statement of income. For 2017, these balances were reported in employee benefits.

Table 23.4 provides the amounts recognized in cumulative OCI (pre-tax).

Table 23.4: Benefits Recognized in Cumulative OCI

(in millions)	December 31, 2019			December 31, 2018		
	Pension benefits			Pension benefits		
	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Net actuarial loss (gain)	\$ 3,226	186	(357)	3,336	149	(327)
Net prior service cost (credit)	1	—	(146)	1	—	(156)
Total	\$ 3,227	186	(503)	3,337	149	(483)

Plan Assumptions

For additional information on our pension accounting assumptions, see Note 1 (Summary of Significant Accounting Policies). Table 23.5 presents the weighted-average assumptions used to estimate the projected benefit obligation.

Table 23.5: Weighted-Average Assumptions Used to Estimate Projected Benefit Obligation

	December 31, 2019			December 31, 2018		
	Pension benefits		Other benefits	Pension benefits		
	Qualified	Non-qualified		Qualified	Non-qualified	Other benefits
Discount rate	3.21%	3.03	3.10	4.30	4.20	4.24
Interest crediting rate	2.70	1.35	N/A	3.22	2.18	N/A

Table 23.6 presents the weighted-average assumptions used to determine the net periodic benefit cost.

Table 23.6: Weighted-Average Assumptions Used to Determine Net Periodic Benefit Cost

	December 31, 2019			December 31, 2018			December 31, 2017		
	Pension benefits		Other benefits	Pension benefits			Pension benefits		
	Qualified	Non-qualified		Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Discount rate (1)	4.30%	4.10	4.24	3.65	3.65	3.54	3.98	3.93	4.00
Interest crediting rate (1)	3.22	2.05	N/A	2.74	1.68	N/A	2.92	1.85	N/A
Expected return on plan assets	6.24	N/A	5.75	6.24	N/A	5.75	6.70	N/A	5.75

(1) Includes the impact of interim re-measurements as applicable.

To account for postretirement health care plans, we used health care cost trend rates to recognize the effect of expected changes in future health care costs due to medical inflation, utilization changes, new technology, regulatory requirements and Medicare cost shifting. In determining the end of year benefit obligation, we assumed an average annual increase of approximately 8.30% for health care costs in 2020. This rate is assumed to trend down 0.40%-0.50% per year until the trend rate reaches an ultimate rate of 4.50% in 2028. The 2019 periodic benefit cost was determined using an initial annual trend rate of 8.40%. This rate was assumed to decrease 0.50%-0.60% per year until the trend rate reached an ultimate rate of 4.50% in 2026.

Investment Strategy and Asset Allocation

We seek to achieve the expected long-term rate of return with a prudent level of risk, given the benefit obligations of the pension plans and their funded status. Our overall investment strategy is designed to provide our Cash Balance Plan with a moderate amount of long-term growth opportunities while ensuring that risk is mitigated through diversification across numerous asset classes and various investment strategies, coupled with an investment strategy for the fixed income assets that is generally designed to approximate the interest rate sensitivity of the Cash Balance Plan's benefit obligations. As of the end of 2019, the asset allocation for our Cash Balance Plan had a mix range of 20%-40% equities, 50%-70% fixed income, and approximately 10% in real estate, private equity and other investments. The Employee Benefit Review Committee (EBRC), which includes several members of senior management, formally reviews the investment risk and performance of our Cash Balance Plan on a quarterly basis. Annual Plan liability analysis and periodic asset/liability evaluations are also conducted.

Other benefit plan assets include (1) assets held in a 401(h) trust, which are invested with a target mix of 40%-60% for both equities and fixed income, and (2) assets held in the Retiree Medical Plan Voluntary Employees' Beneficiary Association (VEBA) trust, which are predominately invested in fixed income securities and cash. Members of the EBRC formally review the investment risk and performance of these assets on a quarterly basis.

Projected Benefit Payments

Future benefits that we expect to pay under the pension and other benefit plans are presented in Table 23.7.

Table 23.7: Projected Benefit Payments

(in millions)	Pension benefits		
	Qualified	Non-qualified	Other Benefits
Year ended December 31,			
2020	\$ 826	50	42
2021	811	48	42
2022	797	45	41
2023	738	44	40
2024	720	42	38
2025-2029	3,391	187	167

Note 23: Employee Benefits and Other Expenses (continued)

Fair Value of Plan Assets

Table 23.8 presents the classification of the fair value of the pension plan and other benefit plan assets in the fair value hierarchy. See Note 19 (Fair Values of Assets and Liabilities) for a description of the fair value hierarchy.

Table 23.8: Pension and Other Benefit Plan Assets

(in millions)	Carrying value at year end							
	Pension plan assets				Other benefits plan assets			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
December 31, 2019								
Cash and cash equivalents	\$ 3	287	—	290	53	145	—	198
Long duration fixed income (1)	821	5,259	—	6,080	—	—	—	—
Intermediate (core) fixed income (2)	—	167	—	167	—	177	—	177
High-yield fixed income	—	217	—	217	—	—	—	—
International fixed income	33	97	—	130	—	—	—	—
Domestic large-cap stocks (3)	700	290	—	990	—	73	—	73
Domestic mid-cap stocks	210	113	—	323	—	19	—	19
Domestic small-cap stocks	201	9	—	210	—	11	—	11
Global stocks (4)	92	374	—	466	—	—	—	—
International stocks (5)	567	120	—	687	12	22	—	34
Emerging market stocks	—	249	—	249	—	—	—	—
Real estate	141	35	7	183	—	—	—	—
Hedge funds/absolute return	68	50	—	118	—	—	—	—
Other	57	48	9	114	4	—	24	28
Plan investments - excluding investments at NAV	\$ 2,893	7,315	16	10,224	69	447	24	540
Investments at NAV (6)				478				—
Net receivables				61				—
Total plan assets				\$ 10,763				540
December 31, 2018								
Cash and cash equivalents	\$ 2	284	—	286	69	22	—	91
Long duration fixed income (1)	902	4,414	—	5,316	—	—	—	—
Intermediate (core) fixed income (2)	—	118	—	118	—	183	—	183
High-yield fixed income	—	114	—	114	—	—	—	—
International fixed income	55	186	—	241	—	—	—	—
Domestic large-cap stocks (3)	582	238	—	820	—	115	—	115
Domestic mid-cap stocks	167	89	—	256	—	28	—	28
Domestic small-cap stocks	141	7	—	148	—	17	—	17
Global stocks (4)	72	357	—	429	—	—	—	—
International stocks (5)	449	110	—	559	9	40	—	49
Emerging market stocks	—	205	—	205	—	—	—	—
Real estate	148	33	14	195	—	—	—	—
Hedge funds/absolute return	63	32	—	95	—	—	—	—
Other	34	44	8	86	4	—	24	28
Plan investments - excluding investments at NAV	\$ 2,615	6,231	22	8,868	82	405	24	511
Investments at NAV (6)				566				—
Net receivables				43				—
Total plan assets				\$ 9,477				511

- This category includes a diversified mix of assets, which are being managed in accordance with a duration target of approximately 10 years and an emphasis on corporate credit bonds combined with investments in U.S. Treasury securities and other U.S. agency and non-agency bonds.
- This category includes assets that are intermediate duration, investment grade bonds held in investment strategies benchmarked to the Bloomberg Barclays Capital U.S. Aggregate Bond Index, including U.S. Treasury securities, agency and non-agency asset-backed bonds and corporate bonds.
- This category covers a broad range of investment styles, including active, enhanced index and passive approaches, as well as style characteristics of value, core and growth emphasized strategies. Assets in this category are currently diversified across eight unique investment strategies with no single investment manager strategy representing more than 2.0% of total plan assets.
- This category consists of five unique investment strategies providing exposure to broadly diversified, global equity investments, which generally have an allocation of 40-60% in U.S. domiciled equities and an equivalent allocation range in non-U.S. equities, with no single strategy representing more than 1.5% of total Plan assets.
- This category includes assets diversified across four unique investment strategies providing exposure to companies in developed market, non-U.S. countries with no single strategy representing more than 2.5% of total plan assets.
- Consists of certain investments that are measured at fair value using NAV per share (or its equivalent) as a practical expedient and are excluded from the fair value hierarchy.

Table 23.9 presents the changes in Level 3 pension plan and other benefit plan assets measured at fair value.

Table 23.9: Fair Value Level 3 Pension and Other Benefit Plan Assets

(in millions)	Balance beginning of year	Gains (losses)		Purchases, sales and settlements (net)	Transfers Into/ (Out of) Level 3	Balance end of year
		Realized	Unrealized (1)			
Quarter ended December 31, 2019						
Pension plan assets:						
Real estate	\$ 14	1	1	(9)	—	7
Other	8	—	2	(1)	—	9
Total pension plan assets	\$ 22	1	3	(10)	—	16
Other benefits plan assets:						
Other	\$ 24	—	—	—	—	24
Total other benefit plan assets	\$ 24	—	—	—	—	24
Quarter ended December 31, 2018						
Pension plan assets:						
Real estate	\$ 20	(2)	(1)	(3)	—	14
Other	8	—	—	—	—	8
Total pension plan assets	\$ 28	(2)	(1)	(3)	—	22
Other benefits plan assets:						
Other	\$ 23	1	—	—	—	24
Total other benefit plan assets	\$ 23	1	—	—	—	24

(1) All unrealized gains (losses) relate to instruments held at period end.

VALUATION METHODOLOGIES Following is a description of the valuation methodologies used for assets measured at fair value.

Cash and Cash Equivalents – includes investments in collective investment funds valued at fair value based upon the fund's NAV per share held at year-end. The NAV per share is quoted on a private market that is not active; however, the NAV per share is based on underlying investments traded on an active market. This group of assets also includes investments in registered investment companies valued at the NAV per share held at year-end and in interest-bearing bank accounts.

Long Duration, Intermediate (Core), High-Yield, and International Fixed Income – includes investments traded on the secondary markets; prices are measured by using quoted market prices for similar securities, pricing models, and discounted cash flow analyses using significant inputs observable in the market where available, or a combination of multiple valuation techniques. This group of assets also includes highly liquid government securities such as U.S. Treasuries, limited partnerships valued at the NAV, registered investment companies and collective investment funds described above.

Domestic, Global, International and Emerging Market Stocks – investments in exchange-traded equity securities are valued at quoted market values. This group of assets also includes investments in registered investment companies and collective investment funds described above.

Real Estate – includes investments in real estate, which are valued at fair value based on an income capitalization valuation approach. Market values are estimates, and the actual market price of the real estate can only be determined by negotiation between independent third parties in sales transactions. This group of assets also includes investments in exchange-traded equity securities and collective investment funds described above.

Hedge Funds / Absolute Return – includes investments in registered investment companies, and limited partnerships, as described above.

Other – insurance contracts that are stated at cash surrender value. This group of assets also includes investments in registered investment companies and collective investment funds described above.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. While we believe our 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 fair value measurement at the reporting date.

Note 23: Employee Benefits and Other Expenses (continued)

Defined Contribution Retirement Plans

We sponsor a qualified defined contribution retirement plan, the Wells Fargo & Company 401(k) Plan (401(k) Plan). Under the 401(k) Plan, after 1 month of service, eligible employees may contribute up to 50% of their certified compensation, subject to statutory limits. Eligible employees who complete one year of service are eligible for quarterly company matching contributions, which are generally dollar for dollar up to 6% of an employee's eligible certified compensation. Matching contributions are 100% vested. The 401(k) Plan includes an employer discretionary profit sharing contribution feature to allow us to make a contribution to eligible employees' 401(k) Plan accounts for a plan year. Eligible employees who complete one year of service are eligible for profit sharing contributions. Profit sharing contributions are vested after three years of service. Total defined contribution retirement plan expenses were \$1.1 billion in 2019 and \$1.2 billion in both 2018 and 2017.

Other Expenses

Table 23.10 separately presents other expenses exceeding 1% of the sum of net interest income and total noninterest income in any of the years presented.

Table 23.10: Other Expenses

(in millions)	Year ended December 31,		
	2019	2018	2017
Operating losses	\$ 4,321	3,124	5,492
Outside professional services	3,198	3,306	3,813
Contract services (1)	2,489	2,192	1,638
Leases (2)	1,155	1,334	1,351
Advertising and promotion	1,076	857	614
Outside data processing	673	660	891
Other	3,840	4,129	3,789
Total other noninterest expense	\$ 16,752	15,602	17,588

- (1) The amount for 2017 has been revised to conform with the current period presentation whereby temporary help is included in contract services rather than in all other noninterest expense.
- (2) Represents expenses for assets we lease to customers.

Note 24: Income Taxes

Table 24.1 presents the components of income tax expense.

Table 24.1: Income Tax Expense

(in millions)	Year ended December 31,		
	2019	2018	2017
Current:			
Federal	\$ 5,244	2,382	3,507
State and local	2,005	1,140	561
Non-U.S.	154	170	183
Total current	7,403	3,692	4,251
Deferred:			
Federal	(2,374)	1,706	156
State and local	(863)	236	564
Non-U.S.	(9)	28	(54)
Total deferred	(3,246)	1,970	666
Total	\$ 4,157	5,662	4,917

The tax effects of our temporary differences that gave rise to significant portions of our deferred tax assets and liabilities are presented in Table 24.2.

Table 24.2: Net Deferred Tax Liability (1)

(in millions)	Dec 31, 2019	Dec 31, 2018
Deferred tax assets		
Allowance for credit losses	\$ 2,587	2,644
Deferred compensation and employee benefits	2,969	2,893
Accrued expenses	874	815
PCI loans	69	467
Basis difference in debt securities	690	98
Net unrealized losses on debt securities	—	1,022
Net operating loss and tax credit carry forwards	363	366
Other	1,207	1,272
Total deferred tax assets	8,759	9,577
Deferred tax assets valuation allowance	(306)	(315)
Deferred tax liabilities		
Mortgage servicing rights	(3,080)	(3,475)
Leasing	(4,413)	(4,271)
Basis difference in investments	(1,626)	(1,301)
Mark to market, net	(4,146)	(7,252)
Intangible assets	(511)	(427)
Net unrealized gains on debt securities	(504)	—
Insurance reserves	(561)	(696)
Other	(890)	(831)
Total deferred tax liabilities	(15,731)	(18,253)
Net deferred tax liability (2)	\$ (7,278)	(8,991)

- (1) Prior period amounts have been revised to conform with the current period presentation.
(2) The net deferred tax liability is included in accrued expenses and other liabilities.

Deferred taxes related to net unrealized gains (losses) on debt securities, net unrealized gains (losses) on derivatives, foreign currency translation, and employee benefit plan adjustments are recorded in cumulative OCI. In 2018, we reclassified \$400 million from cumulative OCI to retained earnings to update amounts to an appropriate tax rate under the Tax Act. See Note 26 (Other Comprehensive Income) for more information.

We have determined that a valuation allowance is required for 2019 in the amount of \$306 million, predominantly attributable to deferred tax assets in various state and non-U.S. jurisdictions where we believe it is more likely than not that these deferred tax assets will not be realized. In these jurisdictions, carry back limitations, lack of sources of taxable income, and tax planning strategy limitations contributed to our conclusion that the deferred tax assets would not be realizable. We have concluded that it is more likely than not that the remaining deferred tax assets will be realized based on our history of earnings, sources of taxable income in carry back periods, and our ability to implement tax planning strategies.

At December 31, 2019, we had net operating loss carry forwards with related deferred tax assets of \$363 million. If these carry forwards are not utilized, they will mostly expire in varying amounts through December 31, 2039.

We do not intend to distribute earnings of certain non-U.S. subsidiaries in a taxable manner, and therefore intend to limit distributions of non-U.S. earnings previously taxed in the U.S., that would qualify for the 100% dividends received deduction, and that would not result in any significant state or non-U.S. taxes. All other undistributed non-U.S. earnings will continue to be permanently reinvested outside the U.S. and the related tax liability on these earnings is insignificant.

Note 24: Income Taxes (continued)

Table 24.3 reconciles the statutory federal income tax expense and rate to the effective income tax expense and rate. Our effective tax rate is calculated by dividing income tax

expense by income before income tax expense less the net income from noncontrolling interests.

Table 24.3: Effective Income Tax Expense and Rate

(in millions)	December 31,					
	2019		2018		2017	
	Amount	Rate	Amount	Rate	Amount	Rate
Statutory federal income tax expense and rate	\$ 4,978	21.0%	\$ 5,892	21.0%	\$ 9,485	35.0%
Change in tax rate resulting from:						
State and local taxes on income, net of federal income tax benefit	896	3.8	1,076	3.9	926	3.4
Tax-exempt interest	(460)	(2.0)	(494)	(1.8)	(812)	(3.0)
Tax credits	(1,715)	(7.2)	(1,537)	(5.5)	(1,419)	(5.2)
Non-deductible accruals	653	2.7	236	0.8	1,320	4.9
Tax reform	—	—	164	0.6	(3,713)	(13.7)
Other	(195)	(0.8)	325	1.2	(870)	(3.3)
Effective income tax expense and rate	\$ 4,157	17.5%	\$ 5,662	20.2%	\$ 4,917	18.1%

All three years include income tax expense related to non-tax-deductible litigation accruals. The 2019 and 2018 effective tax rates reflect the reduction in the U.S. federal statutory income tax rate from 35% to 21% resulting from the Tax Cuts & Jobs Act (Tax Act). The 2018 effective tax rate also reflected the reconsideration of reserves for state income taxes following the U.S. Supreme Court opinion in *South Dakota v. Wayfair, Inc.* as well as \$164 million of income tax expense resulting from the final re-measurement of our initial estimates for the impacts of the Tax Act. The 2017 effective income tax rate included an estimated impact of the Tax Act, including a benefit of \$3.9 billion resulting from the re-measurement of the Company's estimated net deferred tax liability as of December 31, 2017, partially offset by \$173 million of income tax expense for the estimated deemed repatriation of the Company's previously undistributed non-U.S. earnings.

Table 24.4 presents the change in unrecognized tax benefits.

Table 24.4: Change in Unrecognized Tax Benefits

(in millions)	Year ended December 31,	
	2019	2018
Balance at beginning of year	\$ 5,750	5,167
Additions:		
For tax positions related to the current year	123	393
For tax positions related to prior years	91	503
Reductions:		
For tax positions related to prior years	(378)	(262)
Lapse of statute of limitations	(5)	(7)
Settlements with tax authorities	(123)	(44)
Balance at end of year	\$ 5,458	5,750

Of the \$5.5 billion of unrecognized tax benefits at December 31, 2019, approximately \$3.8 billion would, if recognized, affect the effective tax rate. The remaining \$1.7 billion of unrecognized tax benefits relates to income tax positions on temporary differences.

We recognize interest and penalties related to unrecognized tax benefits as a component of income tax expense. As of December 31, 2019 and 2018, we have accrued approximately \$998 million and \$968 million, respectively, for the payment of interest and penalties. In 2019, we recognized in income tax expense a net tax expense related to interest and penalties of \$35 million. In 2018, we recognized in income tax expense a net tax expense related to interest and penalties of \$200 million.

We are subject to U.S. federal income tax as well as income tax in numerous state and non-U.S. jurisdictions. We are routinely examined by tax authorities in these various jurisdictions. The IRS is currently examining the 2015 through 2016 consolidated U.S. federal income tax returns of Wells Fargo & Company and its subsidiaries. In addition, we are currently subject to examination by various state, local and non-U.S. taxing authorities. With few exceptions, Wells Fargo and its subsidiaries are not subject to federal, state, local and non-U.S. income tax examinations for taxable years prior to 2007.

We are litigating or appealing various issues related to prior IRS examinations for the periods 2003 through 2014. For the 2003 through 2006 periods, we have paid the IRS the contested income tax and interest associated with these issues and refund claims have been filed for the respective years. It is possible that one or more of these examinations, appeals or litigation may be resolved within the next twelve months resulting in a decrease of up to \$1.3 billion to our gross unrecognized tax benefits.

Note 25: Earnings and Dividends Per Common Share

Table 25.1 shows earnings per common share and diluted earnings per common share and reconciles the numerator and denominator of both earnings per common share calculations. See Note 1 (Summary of Significant Accounting Policies) for

discussion on share repurchases, and the Consolidated Statement of Changes in Equity and Note 21 (Common Stock and Stock Plans) for information about stock and options activity and terms and conditions of warrants.

Table 25.1: Earnings Per Common Share Calculations

(in millions, except per share amounts)	Year ended December 31,		
	2019	2018	2017
Wells Fargo net income	\$ 19,549	22,393	22,183
Less: Preferred stock dividends and other (1)	1,611	1,704	1,629
Wells Fargo net income applicable to common stock (numerator)	\$ 17,938	20,689	20,554
Earnings per common share			
Average common shares outstanding (denominator)	4,393.1	4,799.7	4,964.6
Per share	\$ 4.08	4.31	4.14
Diluted earnings per common share			
Average common shares outstanding	4,393.1	4,799.7	4,964.6
Add: Stock options (2)	0.8	8.0	17.1
Restricted share rights (2)	31.5	26.3	24.7
Warrants (2)	—	4.4	10.9
Diluted average common shares outstanding (denominator)	4,425.4	4,838.4	5,017.3
Per share	\$ 4.05	4.28	4.10

(1) The years ended December 31, 2019 and December 31, 2018, includes \$220 million and \$155 million, respectively, as a result of eliminating the discount on our Series K and Series J Preferred Stock. The Series K Preferred Stock was partially redeemed on September 16, 2019, and the Series J Preferred stock was redeemed on September 17, 2018.

(2) Calculated using the treasury stock method.

Table 25.2 presents the outstanding Convertible Preferred Stock, Series L, and options to purchase shares of common stock that were anti-dilutive and therefore not included in the calculation of diluted earnings per common share.

Table 25.2: Outstanding Anti-Dilutive Securities

(in millions)	Weighted-average shares		
	Year ended December 31,		
	2019	2018	2017
Convertible Preferred Stock, Series L (1)	25.3	25.3	25.3
Stock options (2)	—	0.3	1.9

(1) Calculated using the if-converted method.

(2) Calculated using the treasury stock method.

Table 25.3 presents dividends declared per common share.

Table 25.3: Dividends Declared Per Common Share

	Year ended December 31,		
	2019	2018	2017
Per common share	\$ 1.92	1.64	1.54

Note 26: Other Comprehensive Income

Table 26.1 provides the components of other comprehensive income (OCI), reclassifications to net income by income statement line item, and the related tax effects.

Table 26.1: Summary of Other Comprehensive Income

(in millions)	Year ended December 31,								
	2019			2018			2017		
	Before tax	Tax effect	Net of tax	Before tax	Tax effect	Net of tax	Before tax	Tax effect	Net of tax
Debt securities (1):									
Net unrealized gains (losses) arising during the period	\$ 5,439	(1,337)	4,102	(4,493)	1,100	(3,393)	2,719	(1,056)	1,663
Reclassification of net (gains) losses to net income:									
Interest income on debt securities (2)	263	(65)	198	357	(88)	269	198	(75)	123
Net gains on debt securities	(140)	34	(106)	(108)	27	(81)	(479)	181	(298)
Net gains from equity securities (3)	—	—	—	—	—	—	(456)	172	(284)
Other noninterest income	(1)	—	(1)	(1)	—	(1)	—	—	—
Subtotal reclassifications to net income	122	(31)	91	248	(61)	187	(737)	278	(459)
Net change	5,561	(1,368)	4,193	(4,245)	1,039	(3,206)	1,982	(778)	1,204
Derivatives and hedging activities:									
Fair Value Hedges:									
Change in fair value of excluded components on fair value hedges (4)	(3)	1	(2)	(254)	63	(191)	(253)	95	(158)
Cash Flow Hedges:									
Net unrealized losses arising during the period on cash flow hedges	(21)	5	(16)	(278)	67	(211)	(287)	108	(179)
Reclassification of net (gains) losses to net income:									
Interest income on loans	291	(72)	219	292	(72)	220	(551)	208	(343)
Interest expense on long-term debt	8	(2)	6	2	—	2	8	(3)	5
Subtotal reclassifications to net income	299	(74)	225	294	(72)	222	(543)	205	(338)
Net change	275	(68)	207	(238)	58	(180)	(1,083)	408	(675)
Defined benefit plans adjustments:									
Net actuarial and prior service gains (losses) arising during the period	(40)	10	(30)	(434)	106	(328)	49	(12)	37
Reclassification of amounts to noninterest expense and employee benefits (5):									
Amortization of net actuarial loss	141	(35)	106	127	(31)	96	150	(57)	93
Settlements and other	(8)	5	(3)	126	(29)	97	3	2	5
Subtotal reclassifications to noninterest expense and employee benefits	133	(30)	103	253	(60)	193	153	(55)	98
Net change	93	(20)	73	(181)	46	(135)	202	(67)	135
Foreign currency translation adjustments:									
Net unrealized gains (losses) arising during the period	73	(2)	71	(156)	1	(155)	96	3	99
Net change	73	(2)	71	(156)	1	(155)	96	3	99
Other comprehensive income (loss)	\$ 6,002	(1,458)	4,544	(4,820)	1,144	(3,676)	1,197	(434)	763
Less: Other comprehensive loss from noncontrolling interests, net of tax			—			(2)			(62)
Wells Fargo other comprehensive income (loss), net of tax			\$ 4,544			(3,674)			825

- The year ended December 31, 2017, includes net unrealized gains (losses) arising during the period from equity securities of \$81 million and reclassification of net (gains) losses to net income related to equity securities of \$(456) million. In connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, the years ended December 31, 2018, and December 31, 2019, reflect net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.
- Represents net unrealized gains and losses amortized over the remaining lives of securities that were transferred from the available-for-sale portfolio to the held-to-maturity portfolio.
- Net gains from equity securities is presented for table presentation purposes. After our adoption of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities* on January 1, 2018, this line will not contain balances as realized and unrealized gains and losses on marketable equity investments will be recorded in earnings.
- Represents changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads, which are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income.
- Effective January 1, 2018, we adopted ASU 2017-07 – *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. Accordingly, 2018 and 2019 balances are reclassified to other noninterest expense on the consolidated statement of income. For 2017 these balances were reclassified to employee benefits.

Table 26.2 provides the cumulative OCI balance activity on an after-tax basis.

Table 26.2: Cumulative OCI Balances

(in millions)	Debt securities (1)	Fair value hedges (2)	Cash flow hedges (3)	Defined benefit plans adjustments	Foreign currency translation adjustments	Cumulative other comprehensive income (loss)
Balance, December 31, 2016	\$ (1,099)	—	89	(1,943)	(184)	(3,137)
Transition adjustment (4)	—	169	(1)	—	—	168
Balance, January 1, 2017	(1,099)	169	88	(1,943)	(184)	(2,969)
Net unrealized gains (losses) arising during the period	1,663	(158)	(179)	37	99	1,462
Amounts reclassified from accumulated other comprehensive income	(459)	—	(338)	98	—	(699)
Net change	1,204	(158)	(517)	135	99	763
Less: Other comprehensive income (loss) from noncontrolling interests	(66)	—	—	—	4	(62)
Balance, December 31, 2017	171	11	(429)	(1,808)	(89)	(2,144)
Transition adjustment (5)	(118)	—	—	—	—	(118)
Balance, January 1, 2018	53	11	(429)	(1,808)	(89)	(2,262)
Reclassification of certain tax effects to retained earnings (6)	31	2	(89)	(353)	9	(400)
Net unrealized losses arising during the period	(3,393)	(191)	(211)	(328)	(155)	(4,278)
Amounts reclassified from accumulated other comprehensive income	187	—	222	193	—	602
Net change	(3,175)	(189)	(78)	(488)	(146)	(4,076)
Less: Other comprehensive loss from noncontrolling interests	—	—	—	—	(2)	(2)
Balance, December 31, 2018	(3,122)	(178)	(507)	(2,296)	(233)	(6,336)
Transition adjustment (7)	481	—	—	—	—	481
Balance, January 1, 2019	(2,641)	(178)	(507)	(2,296)	(233)	(5,855)
Net unrealized gains (losses) arising during the period	4,102	(2)	(16)	(30)	71	4,125
Amounts reclassified from accumulated other comprehensive income	91	—	225	103	—	419
Net change	4,193	(2)	209	73	71	4,544
Less: Other comprehensive income (loss) from noncontrolling interests	—	—	—	—	—	—
Balance, December 31, 2019	\$ 1,552	(180)	(298)	(2,223)	(162)	(1,311)

- (1) The year ended December 31, 2017, includes net unrealized gains (losses) arising during the period from equity securities of \$81 million and reclassification of net (gains) losses to net income related to equity securities of \$(456) million. In connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, the years ended December 31, 2018, and December 31, 2019, reflect net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.
- (2) Substantially all of the amounts for fair value hedges are foreign exchange contracts.
- (3) Substantially all of the amounts for cash flow hedges are foreign exchange contracts for the year-ended December 31, 2019, and interest rate contracts for the years ended December 31, 2018 and 2017.
- (4) Transition adjustment relates to our adoption of ASU 2017-12 – Derivatives and Hedging (Topic 815): *Targeted Improvements to Accounting for Hedging Activities*.
- (5) The transition adjustment relates to our adoption of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*.
- (6) Represents the reclassification from other comprehensive income to retained earnings as a result of our adoption of ASU 2018-02 – Income Statement-Reporting Comprehensive Income (Topic 220): *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* in third quarter 2018.
- (7) The transition adjustment relates to our adoption of ASU 2017-08 – Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20): *Premium Amortization on Purchased Callable Debt Securities*. See Note 1 (Summary of Significant Accounting Policies) for more information.

Note 27: Operating Segments

As of December 31, 2019, we had three reportable operating segments: Community Banking; Wholesale Banking; and Wealth and Investment Management (WIM). We define our operating segments by product type and customer segment and their results are based on our management reporting process. The management reporting process is based on U.S. GAAP with specific adjustments, such as for funds transfer pricing for asset/liability management, for shared revenues and expenses, and tax-equivalent adjustments to consistently reflect income from taxable and tax-exempt sources. The management reporting process measures the performance of the operating segments based on our management structure and is not necessarily comparable with similar information for other financial services companies. On February 11, 2020, we announced a new organizational structure with five principal lines of business: Consumer and Small Business Banking; Consumer Lending; Commercial Banking; Corporate and Investment Banking; and Wealth and Investment Management. The Company is currently in the process of transitioning to this new organizational structure, including identifying leadership for some of these principal business lines and aligning management reporting and allocation methodologies. These changes will not impact the consolidated financial results of the Company, but are expected to result in changes to our operating segments. We will update our operating segment disclosures, including comparative financial results, when the Company completes its transition and is managed in accordance with the new organizational structure.

Community Banking offers a complete line of diversified financial products and services for consumers and small businesses with annual sales generally up to \$5 million in which the owner generally is the financial decision maker. These financial products and services include checking and savings accounts, credit and debit cards, and automobile, student, mortgage, home equity and small business lending, as well as referrals to Wholesale Banking and WIM business partners.

Community Banking serves customers through a complete range of channels, including traditional and in-supermarket and other small format branches, ATMs, digital (online, mobile, and social), and contact centers (phone, email and correspondence).

The Community Banking segment also includes the results of our Corporate Treasury activities net of allocations (including funds transfer pricing, capital, liquidity and certain corporate expenses) in support of other segments and results of investments in our affiliated venture capital and private equity partnerships.

Wholesale Banking provides financial solutions to businesses with annual sales generally in excess of \$5 million and to financial institutions globally. Wholesale Banking provides a complete line of commercial, corporate, capital markets, cash management and real estate banking products and services. These include traditional commercial loans and lines of credit, letters of credit, asset-based lending, equipment leasing, international trade facilities, trade financing, collection services, foreign exchange services, treasury management, institutional fixed-income sales, interest rate, commodity and equity risk management, online/electronic products such as the *Commercial Electronic Office*[®] (CEO[®]) portal, corporate trust fiduciary and agency services, and investment banking services. Wholesale Banking also supports the CRE market with products and services such as construction loans for commercial and residential development, land acquisition and development loans, secured and unsecured lines of credit, interim financing arrangements for completed structures, rehabilitation loans, affordable housing loans and letters of credit, permanent loans for securitization, and CRE loan servicing.

Wealth and Investment Management provides a full range of personalized wealth management, investment and retirement products and services to clients across U.S.-based businesses including Wells Fargo Advisors, The Private Bank, Abbot Downing, and Wells Fargo Asset Management. We deliver financial planning, private banking, credit, investment management and fiduciary services to high-net worth and ultra-high-net worth individuals and families. We also serve clients' brokerage needs and provide investment management capabilities delivered to global institutional clients through separate accounts and the Wells Fargo Funds.

Other includes the elimination of certain items that are included in more than one business segment, substantially all of which represents products and services for Wealth and Investment Management customers served through Community Banking distribution channels.

Table 27.1 presents our results by operating segment.

Table 27.1: Operating Segments

(income/expense in millions, average balances in billions)	Community Banking	Wholesale Banking	Wealth and Investment Management	Other (1)	Consolidated Company
2019					
Net interest income (2)	\$ 27,610	17,699	4,037	(2,115)	47,231
Provision (reversal of provision) for credit losses	2,319	378	5	(15)	2,687
Noninterest income	17,706	9,978	13,304	(3,156)	37,832
Noninterest expense	32,696	15,352	13,709	(3,579)	58,178
Income (loss) before income tax expense (benefit)	10,301	11,947	3,627	(1,677)	24,198
Income tax expense (benefit) (3)	2,426	1,246	904	(419)	4,157
Net income (loss) before noncontrolling interests	7,875	10,701	2,723	(1,258)	20,041
Less: Net income (loss) from noncontrolling interests	477	5	10	—	492
Net income (loss)	\$ 7,398	10,696	2,713	(1,258)	19,549
2018					
Net interest income (2)	\$ 29,219	18,690	4,441	(2,355)	49,995
Provision (reversal of provision) for credit losses	1,783	(58)	(5)	24	1,744
Noninterest income	17,694	10,016	11,935	(3,232)	36,413
Noninterest expense	30,491	16,157	12,938	(3,460)	56,126
Income (loss) before income tax expense (benefit)	14,639	12,607	3,443	(2,151)	28,538
Income tax expense (benefit) (3)	3,784	1,555	861	(538)	5,662
Net income (loss) before noncontrolling interests	10,855	11,052	2,582	(1,613)	22,876
Less: Net income (loss) from noncontrolling interests	461	20	2	—	483
Net income (loss)	\$ 10,394	11,032	2,580	(1,613)	22,393
2017					
Net interest income (2)	\$ 28,658	18,810	4,641	(2,552)	49,557
Provision (reversal of provision) for credit losses	2,555	(19)	(5)	(3)	2,528
Noninterest income	18,360	11,190	12,431	(3,149)	38,832
Noninterest expense	32,615	16,624	12,623	(3,378)	58,484
Income (loss) before income tax expense (benefit)	11,848	13,395	4,454	(2,320)	27,377
Income tax expense (benefit) (3)	634	3,496	1,668	(881)	4,917
Net income (loss) before noncontrolling interests	11,214	9,899	2,786	(1,439)	22,460
Less: Net income (loss) from noncontrolling interests	276	(15)	16	—	277
Net income (loss)	\$ 10,938	9,914	2,770	(1,439)	22,183
2019					
Average loans	\$ 459.4	475.3	75.6	(59.3)	951.0
Average assets	1,028.4	861.0	84.3	(60.3)	1,913.4
Average deposits	782.0	422.5	146.0	(64.2)	1,286.3
2018					
Average loans	463.7	465.7	74.6	(58.8)	945.2
Average assets	1,034.1	830.5	83.9	(59.6)	1,888.9
Average deposits	757.2	423.7	165.0	(70.0)	1,275.9

- (1) Includes the elimination of certain items that are included in more than one business segment, substantially all of which represents products and services for WIM customers served through Community Banking distribution channels.
- (2) Net interest income is the difference between interest earned on assets and the cost of liabilities to fund those assets. Interest earned includes actual interest earned on segment assets as well as interest credits for any funding of a segment available to be provided to other segments. The cost of liabilities includes actual interest expense on segment liabilities as well as funding charges for any funding provided from other segments.
- (3) Income tax expense (benefit) for our Wholesale Banking operating segment included income tax credits related to low-income housing and renewable energy investments of \$1.8 billion, \$1.6 billion and \$1.4 billion for the years ended December 31, 2019, 2018 and 2017 respectively.

Note 28: Parent-Only Financial Statements

The following tables present Parent-only condensed financial statements.

Table 28.1: Parent-Only Statement of Income

(in millions)	Year ended December 31,		
	2019	2018	2017
Income			
Dividends from subsidiaries (1)	\$ 21,930	22,427	20,746
Interest income from subsidiaries	3,356	3,298	1,984
Other interest income	43	49	146
Other income	(162)	(424)	1,238
Total income	25,167	25,350	24,114
Expense			
Interest expense:			
Indebtedness to nonbank subsidiaries	664	644	189
Short-term borrowings	—	2	—
Long-term debt	4,931	4,541	3,595
Other	2	3	5
Noninterest expense	1,327	286	1,888
Total expense	6,924	5,476	5,677
Income before income tax benefit and equity in undistributed income of subsidiaries	18,243	19,874	18,437
Income tax benefit	(945)	(544)	(319)
Equity in undistributed income of subsidiaries	361	1,975	3,427
Net income	\$ 19,549	22,393	22,183

(1) Includes dividends paid from indirect bank subsidiaries of \$21.8 billion, \$20.8 billion and \$17.9 billion in 2019, 2018 and 2017, respectively.

Table 28.2: Parent-Only Statement of Comprehensive Income

(in millions)	Year ended December 31,		
	2019	2018	2017
Net income	\$ 19,549	22,393	22,183
Other comprehensive income (loss), net of tax:			
Debt securities (1)	(45)	(12)	94
Derivatives and hedging activities	(12)	(198)	(158)
Defined benefit plans adjustment	75	(132)	118
Equity in other comprehensive income (loss) of subsidiaries	4,526	(3,332)	771
Other comprehensive income (loss), net of tax:	4,544	(3,674)	825
Total comprehensive income	\$ 24,093	18,719	23,008

(1) The year ended December 31, 2017 includes net unrealized gains arising during the period from equity securities of \$3 million and reclassification of net (gains) to net income related to equity securities of \$(21) million. In connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, the years ended December 31, 2019 and 2018, reflect net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.

Table 28.3: Parent-Only Balance Sheet

(in millions)	Dec 31, 2019	Dec 31, 2018
Assets		
Cash, cash equivalents, and restricted cash due from:		
Subsidiary banks	\$ 14,948	16,301
Nonaffiliates	1	—
Debt securities:		
Available-for-sale, at fair value	1	1
Loans to nonbank subsidiaries	145,383	139,163
Investments in subsidiaries (1)	208,076	202,695
Equity securities	1,007	2,164
Other assets	4,608	4,639
Total assets	\$ 374,024	364,963
Liabilities and equity		
Accrued expenses and other liabilities	\$ 8,050	6,986
Long-term debt	152,628	135,079
Indebtedness to nonbank subsidiaries	26,200	26,732
Total liabilities	186,878	168,797
Stockholders' equity	187,146	196,166
Total liabilities and equity	\$ 374,024	364,963

(1) The years ended December 31, 2019, and December 31, 2018, include indirect ownership of bank subsidiaries with equity of \$170.4 billion and \$167.6 billion, respectively.

Note 28: Parent-Only Financial Statements (continued)**Table 28.4: Parent-Only Statement of Cash Flows**

(in millions)	Year ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net cash provided by operating activities	\$ 27,601	19,024	22,233
Cash flows from investing activities:			
Available-for-sale debt securities:			
Proceeds from sales:			
Subsidiary banks	—	—	8,658
Nonaffiliates	—	—	8,824
Prepayments and maturities:			
Subsidiary banks	—	—	10,250
Purchases:			
Subsidiary banks	—	—	(3,900)
Equity securities, not held for trading:			
Proceeds from sales and capital returns	326	355	743
Purchases	(1,052)	(220)	(215)
Loans:			
Net advances to subsidiaries	(3)	(7)	(35,876)
Capital notes and term loans made to subsidiaries	(5,286)	(2,441)	(73,729)
Principal collected on notes/loans made to subsidiaries	1,703	756	69,286
Net decrease (increase) in investment in subsidiaries	(384)	2,407	(2,029)
Other, net	22	109	113
Net cash provided (used) by investing activities	(4,674)	959	(17,875)
Cash flows from financing activities:			
Net increase (decrease) in short-term borrowings and indebtedness to subsidiaries	(636)	12,467	(8,685)
Long-term debt:			
Proceeds from issuance	20,369	1,876	22,217
Repayment	(8,143)	(9,162)	(13,709)
Preferred stock:			
Proceeds from issuance	—	—	677
Redeemed	(1,550)	(2,150)	—
Cash dividends paid	(1,391)	(1,622)	(1,629)
Common stock:			
Proceeds from issuance	380	632	1,211
Stock tendered for payment of withholding taxes	(302)	(331)	(393)
Repurchased	(24,533)	(20,633)	(9,908)
Cash dividends paid	(8,198)	(7,692)	(7,480)
Other, net	(275)	(248)	(138)
Net cash used by financing activities	(24,279)	(26,863)	(17,837)
Net change in cash, cash equivalents, and restricted cash	(1,352)	(6,880)	(13,479)
Cash, cash equivalents, and restricted cash at beginning of year	16,301	23,181	36,660
Cash, cash equivalents, and restricted cash at end of year	\$ 14,949	16,301	23,181

Note 29: Regulatory and Agency Capital Requirements

The Company and each of its subsidiary banks are subject to regulatory capital adequacy requirements promulgated by federal bank regulatory agencies. The Federal Reserve establishes capital requirements for the consolidated financial holding company, and the OCC has similar requirements for the Company's national banks, including Wells Fargo Bank, N.A. (the Bank).

Table 29.1 presents regulatory capital information for Wells Fargo & Company and the Bank in accordance with the Basel III capital requirements. We must report the lower of our Common Equity Tier 1 (CET1), tier 1 and total capital ratios calculated under the Standardized Approach and under the Advanced Approach in the assessment of our capital adequacy. The Standardized Approach applies assigned risk weights to broad risk categories, while the calculation of risk-weighted assets (RWAs) under the Advanced Approach differs by requiring applicable banks to utilize a risk-sensitive methodology, which relies upon the use of internal credit models, and includes an

operational risk component. The Basel III capital requirements for calculating CET1 and tier 1 capital, along with RWAs, are fully phased-in. However, the requirements for determining tier 2 and total capital are still in accordance with Transition Requirements and are scheduled to be fully phased-in by the end of 2021. Accordingly, the information presented below reflects fully phased-in CET1 capital, tier 1 capital, and RWAs, but reflects total capital still in accordance with Transition Requirements.

At December 31, 2019, the Bank and our other insured depository institutions were considered well-capitalized under the requirements of the Federal Deposit Insurance Act.

The Bank is an approved seller/servicer of mortgage loans and is required to maintain minimum levels of shareholders' equity, as specified by various agencies, including the United States Department of Housing and Urban Development, GNMA, FHLMC and FNMA. At December 31, 2019, the Bank met these requirements.

Table 29.1: Regulatory Capital Information

(in millions, except ratios)	Wells Fargo & Company				Wells Fargo Bank, N.A.			
	December 31, 2019		December 31, 2018		December 31, 2019		December 31, 2018	
	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach
Regulatory capital:								
Common equity tier 1	\$ 138,760	138,760	146,363	146,363	145,149	145,149	142,685	142,685
Tier 1	158,949	158,949	167,866	167,866	145,149	145,149	142,685	142,685
Total	188,333	196,223	198,798	207,041	158,615	166,056	155,558	163,380
Assets:								
Risk-weighted assets	1,230,066	1,245,853	1,177,350	1,247,210	1,110,379	1,152,791	1,058,653	1,154,182
Adjusted average assets (1)	1,913,297	1,913,297	1,850,299	1,850,299	1,695,807	1,695,807	1,652,009	1,652,009
Regulatory capital ratios:								
Common equity tier 1 capital	11.28%	11.14 *	12.43	11.74 *	13.07	12.59 *	13.48	12.36 *
Tier 1 capital	12.92	12.76 *	14.26	13.46 *	13.07	12.59 *	13.48	12.36 *
Total capital	15.31 *	15.75	16.89	16.60 *	14.28 *	14.40	14.69	14.16 *
Tier 1 leverage (1)	8.31	8.31	9.07	9.07	8.56	8.56	8.64	8.64
Supplementary leverage: (2)								
Total leverage exposure	\$	2,247,729		2,174,564		2,006,180		1,957,276
Supplementary leverage ratio		7.07%		7.72		7.24		7.29

* Denotes the lowest capital ratio as determined under the Advanced and Standardized Approaches.

(1) The leverage ratio consists of Tier 1 capital divided by total average assets, excluding goodwill and certain other items.

(2) The supplementary leverage ratio (SLR) consists of Tier 1 capital divided by total leverage exposure. Total leverage exposure consists of total average assets, less goodwill and other permitted Tier 1 capital deductions (net of deferred tax liabilities), plus certain off-balance sheet exposures.

Table 29.2 presents the minimum required regulatory capital ratios under Transition Requirements to which the

Company and the Bank were subject as of December 31, 2019, and December 31, 2018.

Table 29.2: Minimum Required Regulatory Capital Ratios – Transition Requirements (1)

	Wells Fargo & Company		Wells Fargo Bank, N.A.	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Regulatory capital ratios:				
Common equity tier 1 capital	9.000%	7.875	7.000	6.375
Tier 1 capital	10.500	9.375	8.500	7.875
Total capital	12.500	11.375	10.500	9.875
Tier 1 leverage	4.000	4.000	4.000	4.000
Supplementary leverage (2)	5.000	5.000	6.000	6.000

(1) At December 31, 2019, under transition requirements, the CET1, tier 1 and total capital minimum ratio requirements for Wells Fargo & Company include a capital conservation buffer of 2.500% and a global systemically important bank (G-SIB) surcharge of 2.000%. Only the 2.500% capital conservation buffer applies to the Bank at December 31, 2019.

(2) Wells Fargo & Company is required to maintain a SLR of at least 5.000% (comprised of a 3.000% minimum requirement plus a supplementary leverage buffer of 2.000%) to avoid restrictions on capital distributions and discretionary bonus payments. The Bank is required to maintain a SLR of at least 6.000% to be considered well-capitalized under applicable regulatory capital adequacy guidelines.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Wells Fargo & Company:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Wells Fargo & Company and Subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 26, 2020, expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

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: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) 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.

Assessment of the allowance for credit losses

As discussed in Notes 1 and 6 to the consolidated financial statements, the allowance for credit losses is the Company's estimate of credit losses inherent in the loan portfolio, including unfunded credit commitments, at the balance sheet date. The allowance for credit losses at December 31, 2019 was \$10.5 billion, or 1.09% of total loans. Of the total allowance for credit losses, \$9.2 billion relates to loans collectively evaluated for impairment in accordance with ASC 450-20 and \$1.3 billion relates to loans individually evaluated for impairment in accordance with ASC 310-10. The Company has an established process to determine the appropriateness of the allowance for credit losses that estimates the losses inherent in its portfolio and related unfunded credit commitments. The Company develops and documents its allowance methodology at the portfolio segment level - commercial and consumer. For each portfolio segment, losses are estimated collectively for groups of loans with similar characteristics, and individually or pooled for impaired loans.

We identified the assessment of the allowance for credit losses as a critical audit matter because of the complexity and significant judgment involved in evaluating the measurement uncertainty in the estimate. There was a high degree of subjectivity related to the selection of a credit loss estimation model that fits the credit risk characteristics for particular loan portfolios, including the assessment of limitations to credit loss estimation addressed through imprecision. There was also a high degree of subjectivity and potential for management bias related to determining an amount of imprecision for inclusion within the Company's overall estimate of inherent credit losses. Further, the assessment of credit risk ratings for commercial loans required the use of significant judgment as well as industry knowledge and experience to evaluate individual borrower's financial strength and the quality of collateral.

The primary procedures we performed to address this critical audit matter included the following: We tested certain internal controls over the Company's allowance for credit losses estimation process that are designed to (1) evaluate and monitor the ability of the model methodologies to estimate credit losses for selected commercial and consumer portfolios, (2) assess the limitations to credit loss estimation models, (3) determine the amount of imprecision for inclusion within the Company's overall estimate of the effect of quantitative and qualitative factors on inherent credit losses, and (4) assess credit risk ratings for commercial loans. We involved credit risk professionals with specialized skills and knowledge who assisted in testing the Company's process to evaluate the design of selected commercial and consumer portfolio model methodologies and the appropriateness of credit risk ratings to estimate losses in accordance with relevant U.S. generally accepted accounting principles and identify and assess the limitations to the credit loss estimation models. We evaluated the methodologies and assumptions used to estimate certain imprecision amounts. We tested the accuracy of the range for certain quantifiable imprecision amounts, including, as applicable, recalculation of the range and procedures over relevance and reliability of the inputs into the calculation of the range. We tested whether certain imprecision amounts reflect risks inherent in the processes and assumptions used to estimate the allowance for credit losses. We performed trend analyses on the imprecision amount relative to the allowance for credit losses to identify any potential for management bias considering portfolio trends, internal and external credit metrics, and economic factors.

Assessment of the residential mortgage servicing rights (MSRs)

As discussed in Notes 1, 10, 11, 12, and 19 to the consolidated financial statements, the Company recognizes MSRs when it purchases servicing rights from third parties, or retains servicing rights in connection with the sale or securitization of loans it originated. The Company has elected to carry its residential MSRs at fair value with periodic changes reflected in earnings. The Company's residential MSR asset as of December 31, 2019 was \$11.5 billion on an underlying loan servicing portfolio of \$1.1 trillion.

The Company uses a valuation model for determining fair value that calculates the present value of estimated future net servicing income cash flows. The model incorporates assumptions that market participants use in estimating future net servicing income cash flows. These assumptions include estimates of prepayment speeds, discount rates, default rates, cost to service (including delinquency and foreclosure costs), escrow account earnings, contractual servicing fee income, ancillary income and late fees. The estimated fair value of MSRs is periodically benchmarked to independent appraisals.

We identified the assessment of the valuation of residential MSRs as a critical audit matter because of the complexity and significant judgment involved in deriving the estimate. There was a high degree of subjectivity used to evaluate the following key assumptions because they are unobservable and the sensitivity of changes to those assumptions had a significant effect on the valuation: prepayment speeds, discount rate, and costs to service. There was also a high degree of subjectivity and potential for management bias related to updates made to key assumptions due to changes in market conditions, mortgage interest rates, or servicing standards.

The primary procedures we performed to address the critical audit matter included the following: We tested certain internal controls over the Company's residential MSR valuation process to (1) assess the valuation model, (2) evaluate the key assumptions used in determining the MSR fair value, and (3) compare the MSR fair value to independent appraisals. We involved valuation professionals with specialized skills and knowledge who assisted in evaluating the design of the valuation model used to estimate the MSR fair value in accordance with relevant U.S. generally accepted accounting principles, and to evaluate key assumptions (prepayment speeds, discount rates, and costs to service) based on an analysis of backtesting results and a comparison of key assumptions to available data for comparable entities and independent appraisals. We assessed the key assumption updates made during the year by considering backtesting results, external market events, and independent appraisals or other circumstances and by involving valuation professionals to assist in determining that there were no significant assumption updates that a market participant would have expected to be incorporated in the valuation at year end that were not incorporated.

The logo for KPMG LLP, featuring the letters 'KPMG' in a large, bold, stylized font, followed by 'LLP' in a smaller, simpler font.

We have served as the Company's auditor since 1931.

San Francisco, California
February 26, 2020

Quarterly Financial Data

Condensed Consolidated Statement of Income - Quarterly (Unaudited)

(in millions, except per share amounts)	2019				2018			
	Quarter ended				Quarter ended			
	Dec 31,	Sep 30,	Jun 30,	Mar 31,	Dec 31,	Sep 30,	Jun 30,	Mar 31,
Interest income	\$ 15,595	16,499	16,986	17,003	16,921	16,364	16,015	15,347
Interest expense	4,395	4,874	4,891	4,692	4,277	3,792	3,474	3,109
Net interest income	11,200	11,625	12,095	12,311	12,644	12,572	12,541	12,238
Provision for credit losses	644	695	503	845	521	580	452	191
Net interest income after provision for credit losses	10,556	10,930	11,592	11,466	12,123	11,992	12,089	12,047
Noninterest income								
Service charges on deposit accounts	1,279	1,219	1,206	1,094	1,176	1,204	1,163	1,173
Trust and investment fees	3,572	3,559	3,568	3,373	3,520	3,631	3,675	3,683
Card fees	1,020	1,027	1,025	944	981	1,017	1,001	908
Other fees	656	858	800	770	888	850	846	800
Mortgage banking	783	466	758	708	467	846	770	934
Insurance	98	91	93	96	109	104	102	114
Net gains from trading activities	131	276	229	357	10	158	191	243
Net gains (losses) on debt securities	(8)	3	20	125	9	57	41	1
Net gains from equity securities	451	956	622	814	21	416	295	783
Lease income	343	402	424	443	402	453	443	455
Other	335	1,528	744	574	753	633	485	602
Total noninterest income	8,660	10,385	9,489	9,298	8,336	9,369	9,012	9,696
Noninterest expense								
Salaries	4,721	4,695	4,541	4,425	4,545	4,461	4,465	4,363
Commission and incentive compensation	2,651	2,735	2,597	2,845	2,427	2,427	2,642	2,768
Employee benefits	1,436	1,164	1,336	1,938	706	1,377	1,245	1,598
Technology and equipment	802	693	607	661	643	634	550	617
Net occupancy	749	760	719	717	735	718	722	713
Core deposit and other intangibles	26	27	27	28	264	264	265	265
FDIC and other deposit assessments	130	93	144	159	153	336	297	324
Other	5,099	5,032	3,478	3,143	3,866	3,546	3,796	4,394
Total noninterest expense	15,614	15,199	13,449	13,916	13,339	13,763	13,982	15,042
Income before income tax expense	3,602	6,116	7,632	6,848	7,120	7,598	7,119	6,701
Income tax expense	678	1,304	1,294	881	966	1,512	1,810	1,374
Net income before noncontrolling interests	2,924	4,812	6,338	5,967	6,154	6,086	5,309	5,327
Less: Net income from noncontrolling interests	51	202	132	107	90	79	123	191
Wells Fargo net income	\$ 2,873	4,610	6,206	5,860	6,064	6,007	5,186	5,136
Less: Preferred stock dividends and other	327	573	358	353	353	554	394	403
Wells Fargo net income applicable to common stock	\$ 2,546	4,037	5,848	5,507	5,711	5,453	4,792	4,733
Per share information								
Earnings per common share	\$ 0.61	0.93	1.31	1.21	1.22	1.14	0.98	0.97
Diluted earnings per common share	0.60	0.92	1.30	1.20	1.21	1.13	0.98	0.96
Average common shares outstanding	4,197.1	4,358.5	4,469.4	4,551.5	4,665.8	4,784.0	4,865.8	4,885.7
Diluted average common shares outstanding	4,234.6	4,389.6	4,495.0	4,584.0	4,700.8	4,823.2	4,899.8	4,930.7

Average Balances, Yields and Rates Paid (Taxable-Equivalent basis) - Quarterly (1) - (Unaudited)

(in millions)	Quarter ended December 31,					
	2019			2018		
	Average balance	Yields/ rates	Interest income/ expense	Average balance	Yields/ rates	Interest income/ expense
Earning assets						
Interest-earning deposits with banks	\$ 127,287	1.63%	\$ 523	150,091	2.18%	\$ 825
Federal funds sold and securities purchased under resale agreements	109,201	1.72	472	76,108	2.22	426
Debt securities (2):						
Trading debt securities	103,818	3.12	811	90,110	3.52	794
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	15,636	1.79	70	7,195	1.80	32
Securities of U.S. states and political subdivisions	39,502	3.58	354	47,618	4.05	483
Mortgage-backed securities:						
Federal agencies	161,146	2.58	1,038	155,322	2.91	1,128
Residential and commercial	4,745	4.40	53	6,666	4.87	81
Total mortgage-backed securities	165,891	2.63	1,091	161,988	2.99	1,209
Other debt securities	40,497	3.88	395	46,072	4.46	518
Total available-for-sale debt securities	261,526	2.92	1,910	262,873	3.41	2,242
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	45,109	2.19	248	44,747	2.19	247
Securities of U.S. states and political subdivisions	12,701	3.88	123	6,247	4.34	67
Federal agency and other mortgage-backed securities	95,303	2.49	593	95,748	2.46	589
Other debt securities	39	3.28	1	68	3.65	1
Total held-to-maturity debt securities	153,152	2.51	965	146,810	2.46	904
Total debt securities	518,496	2.84	3,686	499,793	3.15	3,940
Mortgage loans held for sale (3)	23,985	3.90	234	17,044	4.46	190
Loans held for sale (3)	1,365	4.13	15	1,992	6.69	33
Loans:						
Commercial loans:						
Commercial and industrial - U.S.	283,650	3.84	2,747	281,431	4.40	3,115
Commercial and industrial - Non-U.S.	67,307	3.40	577	62,035	3.73	584
Real estate mortgage	122,136	4.07	1,255	120,404	4.51	1,369
Real estate construction	20,076	4.71	239	23,090	5.32	310
Lease financing	19,421	4.41	214	19,519	4.48	219
Total commercial loans	512,590	3.90	5,032	506,479	4.39	5,597
Consumer loans:						
Real estate 1-4 family first mortgage	292,388	3.66	2,678	285,260	4.02	2,868
Real estate 1-4 family junior lien mortgage	30,147	5.32	403	34,844	5.60	491
Credit card	39,898	12.26	1,233	37,858	12.69	1,211
Automobile	47,274	5.04	600	45,536	5.16	592
Other revolving credit and installment	34,239	6.60	571	36,359	6.95	637
Total consumer loans	443,946	4.92	5,485	439,857	5.25	5,799
Total loans (3)	956,536	4.37	10,517	946,336	4.79	11,396
Equity securities	38,278	2.81	269	37,412	2.79	261
Other	6,478	1.36	22	4,074	1.78	18
Total earning assets	\$ 1,781,626	3.51%	\$ 15,738	1,732,850	3.93%	\$ 17,089
Funding sources						
Deposits:						
Interest-bearing checking	\$ 63,292	1.09%	\$ 174	53,983	1.21%	\$ 165
Market rate and other savings	732,705	0.59	1,094	689,639	0.43	741
Savings certificates	32,358	1.68	137	21,955	0.87	48
Other time deposits	87,069	2.10	459	92,676	2.46	575
Deposits in non-U.S. offices	54,751	1.50	208	56,098	1.66	236
Total interest-bearing deposits	970,175	0.85	2,072	914,351	0.77	1,765
Short-term borrowings	115,949	1.50	439	105,962	2.04	546
Long-term debt	230,430	3.02	1,743	226,591	3.17	1,802
Other liabilities	27,279	2.04	141	27,365	2.41	164
Total interest-bearing liabilities	1,343,833	1.30	4,395	1,274,269	1.34	4,277
Portion of noninterest-bearing funding sources	437,793	—	—	458,581	—	—
Total funding sources	\$ 1,781,626	0.98	4,395	1,732,850	0.99	4,277
Net interest margin and net interest income on a taxable-equivalent basis (4)		2.53%	\$ 11,343		2.94%	\$ 12,812
Noninterest-earning assets						
Cash and due from banks	\$ 19,943			19,288		
Goodwill	26,389			26,423		
Other	113,885			100,486		
Total noninterest-earning assets	\$ 160,217			146,197		
Noninterest-bearing funding sources						
Deposits	\$ 351,738			354,597		
Other liabilities	53,879			51,739		
Total equity	192,393			198,442		
Noninterest-bearing funding sources used to fund earning assets	(437,793)			(458,581)		
Net noninterest-bearing funding sources	\$ 160,217			146,197		
Total assets	\$ 1,941,843			1,879,047		
Average prime rate			4.83%			5.28%
Average three-month London Interbank Offered Rate (LIBOR)			1.93%			2.62%

- (1) Yields/rates and amounts include the effects of hedge and risk management activities associated with the respective asset and liability categories.
- (2) Yields/rates are based on interest income/expense amounts for the period, annualized based on the accrual basis for the respective accounts. The average balance amounts represent amortized cost for the periods presented.
- (3) Nonaccrual loans and related income are included in their respective loan categories.
- (4) Includes taxable-equivalent adjustments of \$143 million and \$168 million for the quarters ended December 31, 2019 and 2018, respectively, predominantly related to tax-exempt income on certain loans and securities. The federal statutory tax rate was 21% for the periods ended December 31, 2019 and 2018.

Glossary of Acronyms

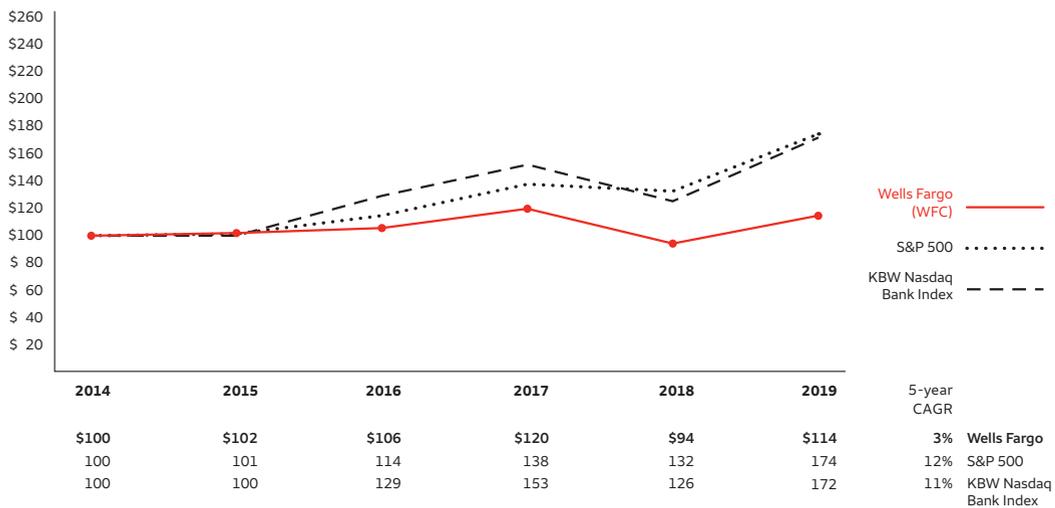
ACL	Allowance for credit losses	LCR	Liquidity coverage ratio
AFS	Available-for-sale	LHFS	Loans held for sale
ALCO	Asset/Liability Management Committee	LIBOR	London Interbank Offered Rate
ARM	Adjustable-rate mortgage	LIHTC	Low income housing tax credit
ASC	Accounting Standards Codification	LOCOM	Lower of cost or market value
ASU	Accounting Standards Update	LTV	Loan-to-value
AUA	Assets under administration	MBS	Mortgage-backed security
AUM	Assets under management	MLHFS	Mortgage loans held for sale
AVM	Automated valuation model	MSR	Mortgage servicing right
BCBS	Basel Committee on Bank Supervision	NAV	Net asset value
BHC	Bank holding company	NPA	Nonperforming asset
CCAR	Comprehensive Capital Analysis and Review	NSFR	Net stable funding ratio
CD	Certificate of deposit	OCC	Office of the Comptroller of the Currency
CDS	Credit default swaps	OCI	Other comprehensive income
CECL	Current expected credit loss	OTC	Over-the-counter
CET1	Common Equity Tier 1	OTTI	Other-than-temporary impairment
CFPB	Consumer Financial Protection Bureau	PCI	Purchased credit-impaired
CLO	Collateralized loan obligation	PTPP	Pre-tax pre-provision profit
CLTV	Combined loan-to-value	RBC	Risk-based capital
CPI	Collateral protection insurance	RMBS	Residential mortgage-backed securities
CRE	Commercial real estate	ROA	Wells Fargo net income to average total assets
DPD	Days past due	ROE	Wells Fargo net income applicable to common stock to average Wells Fargo common stockholders' equity
ESOP	Employee Stock Ownership Plan	ROTCE	Return on average tangible common equity
FASB	Financial Accounting Standards Board	RWAs	Risk-weighted assets
FDIC	Federal Deposit Insurance Corporation	SEC	Securities and Exchange Commission
FHA	Federal Housing Administration	S&P	Standard & Poor's Ratings Services
FHLB	Federal Home Loan Bank	SLR	Supplementary leverage ratio
FHLMC	Federal Home Loan Mortgage Corporation	SOFR	Secured Overnight Financing Rate
FICO	Fair Isaac Corporation (credit rating)	SPE	Special purpose entity
FNMA	Federal National Mortgage Association	TDR	Troubled debt restructuring
FRB	Board of Governors of the Federal Reserve System	TLAC	Total Loss Absorbing Capacity
GAAP	Generally accepted accounting principles	VA	Department of Veterans Affairs
GNMA	Government National Mortgage Association	VaR	Value-at-Risk
GSE	Government-sponsored entity	VIE	Variable interest entity
G-SIB	Globally systemic important bank	WIM	Wealth and Investment Management
HQLA	High-quality liquid assets		
HTM	Held-to-maturity		

Stock Performance

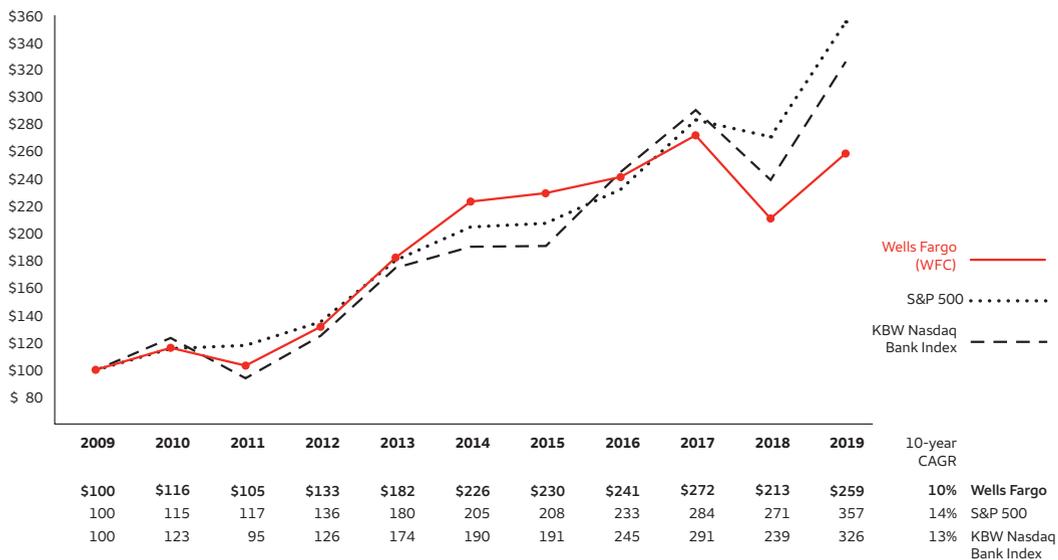
These graphs compare the cumulative total stockholder return and total compound annual growth rate (CAGR) for our common stock (NYSE: WFC) for the five- and ten-year periods ended December 31, 2019, with the cumulative total stockholder returns for the same periods for the Keefe, Bruyette and Woods (KBW) Total Return Bank Index (KBW Nasdaq Bank Index (BKX)) and the S&P 500 Index.

The cumulative total stockholder returns (including reinvested dividends) in the graphs assume the investment of \$100 in Wells Fargo's common stock, the KBW Nasdaq Bank Index, and the S&P 500 Index.

FIVE YEAR PERFORMANCE GRAPH



TEN YEAR PERFORMANCE GRAPH



Wells Fargo & Company

Wells Fargo & Company (NYSE: WFC) is a diversified, community-based financial services company with \$1.9 trillion in assets. Wells Fargo's vision is to satisfy our customers' financial needs and help them succeed financially. Founded in 1852 and headquartered in San Francisco, Wells Fargo provides banking, investment and mortgage products and services, as well as consumer and commercial finance, through 7,400 locations, more than 13,000 ATMs, the internet (wellsfargo.com) and mobile banking, and has offices in 32 countries and territories to support customers who conduct business in the global economy. With approximately 260,000 team members, Wells Fargo serves one in three households in the United States. Wells Fargo & Company was ranked No. 29 on Fortune's 2019 rankings of America's largest corporations.

COMMON STOCK

Wells Fargo & Company is listed and trades on the New York Stock Exchange: WFC

4,134,425,937 common shares outstanding (12/31/19)

STOCK PURCHASE AND DIVIDEND REINVESTMENT

You can buy Wells Fargo stock directly from Wells Fargo, even if you're not a Wells Fargo stockholder, through optional cash payments or automatic monthly deductions from a bank account. You can also have your dividends reinvested automatically. It's a convenient, economical way to increase your Wells Fargo investment.

Call 1-877-840-0492 for an enrollment kit, which includes a plan prospectus.

FORM 10-K

We will send Wells Fargo's 2019 Annual Report on Form 10-K (including the financial statements filed with the Securities and Exchange Commission) free to any shareholder who asks for a copy in writing.

Shareholders also can ask for copies of any exhibit to the Form 10-K. We will charge a fee to cover expenses to prepare and send any exhibits. Please send requests to: Corporate Secretary, Wells Fargo & Company, MAC D1130-117, 301 S. Tryon Street, 11th Floor, Charlotte, North Carolina 28282-1921.

SEC FILINGS

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports are available free of charge on our website (www.wellsfargo.com) as soon as practical after they are electronically filed with or furnished to the SEC. Those reports and amendments are also available free of charge on the SEC's website at www.sec.gov.

FORWARD-LOOKING STATEMENTS

This Annual Report contains forward-looking statements about our future financial performance and business. Because forward-looking statements are based on our current expectations and assumptions regarding the future, they are subject to inherent risks and uncertainties. Do not unduly rely on forward-looking statements, as actual results could differ materially from expectations. Forward-looking statements speak only as of the date made, and we do not undertake to update them to reflect changes or events that occur after that date. For information about factors that could cause actual results to differ materially from our expectations, refer to the discussion under "Forward-Looking Statements" and "Risk Factors" in the Financial Review portion of this Annual Report.

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St. Paul, Minnesota
55164-0874

1-877-840-0492
www.shareowneronline.com

ANNUAL SHAREHOLDERS' MEETING

10 a.m. Mountain Daylight Time
Tuesday, April 28, 2020
The Grand America Hotel
555 South Main Street
Salt Lake City, Utah
84111-4100

Wells Fargo's Extensive Network

LOCATIONS*

7.4K

ATMs

13K

CUSTOMERS

70M+

WELLSFARGO.COM**

30.3M

digital (online and mobile) active customers

MOBILE BANKING**

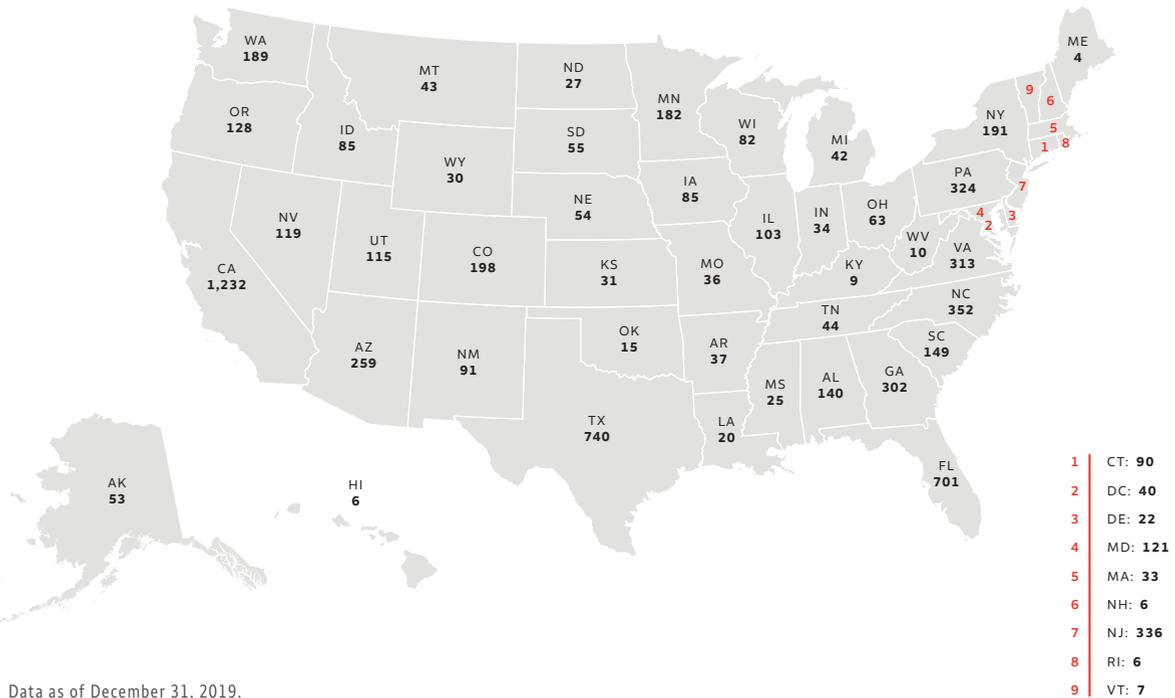
24.4M

mobile active users

*Number of domestic and global locations. Includes Wells Fargo Advisors Private Client Group and Financial Network locations.

**Data as of November 2019.

NUMBER OF DOMESTIC LOCATIONS BY STATE



WELLS FARGO

WELLS FARGO & COMPANY
420 MONTGOMERY STREET | SAN FRANCISCO, CA | 94104
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CCM3520 (Rev 00, 1/each)