NOTE 15 FAIR VALUE

Fair Value Measurement

We measure certain financial assets and liabilities at fair value. Fair value is defined as the price that would be received to sell an asset or the price that would be paid to transfer a liability on the measurement date, and is determined using an exit price in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. The fair value hierarchy established by GAAP requires us to maximize the use of observable inputs when measuring fair value. The three levels of the fair value hierarchy are:

- **Level 1:** Fair value is determined using a quoted price in an active market for identical assets or liabilities. Level 1 assets and liabilities may include debt securities, equity securities and listed derivative contracts that are traded in an active exchange market, and certain U.S. Treasury securities that are actively traded in over-the-counter markets.
- **Level 2:** Fair value is estimated using inputs other than quoted prices included within Level 1 that are observable for assets or liabilities, either directly or indirectly. The majority of Level 2 assets and liabilities include debt securities and listed derivative contracts with quoted prices that are traded in markets that are not active, and certain debt and equity securities and over-the-counter derivative contracts whose fair value is determined using a pricing model without significant unobservable inputs.
- **Level 3:** Fair value is estimated using unobservable inputs that are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models and discounted cash flow methodologies, or similar techniques for which the significant valuation inputs are not observable and the determination of fair value requires significant management judgment or estimation.

We characterize active markets as those where transaction volumes are sufficient to provide objective pricing information, with reasonably narrow bid/ask spreads, and where dealer quotes received do not vary widely and are based on current information. Inactive markets are typically characterized by low transaction volumes, price quotations that vary substantially among market participants or are not based on current information, wide bid/ask spreads, a significant increase in implied liquidity risk premiums, yields, or performance indicators for observed transactions or quoted prices compared to historical periods, a significant decline or absence of a market for new issuance, or any combination of the above factors. We also consider nonperformance risks, including credit risk, as part of our valuation methodology for all assets and liabilities measured at fair value.

Assets and liabilities measured at fair value, by their nature, result in a higher degree of financial statement volatility. Assets and liabilities classified within Level 3 inherently require the use of various assumptions, estimates and judgments when measuring their fair value. As observable market activity is commonly not available to use when estimating the fair value of Level 3 assets and liabilities, we must estimate fair value using various modeling techniques. These techniques include the use of a variety of inputs/assumptions including credit quality, liquidity, interest rates or other relevant inputs across the entire population of our Level 3 assets and liabilities. Changes in the significant underlying factors or assumptions (either an increase or a decrease) in any of these areas underlying our estimates may have resulted in a significant increase/decrease in the Level 3 fair value measurement of a particular asset and/or liability from period to period.

Any models used to determine fair values or to validate dealer quotes are subject to review and independent testing as part of our model validation and internal control testing processes. Our Model Risk Management Group reviews significant models on at least an annual basis. In addition, the Valuation Committee approves valuation methodologies and reviews the results of independent valuation reviews and processes for assets and liabilities measured at fair value on a recurring basis.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Residential Mortgage Loans Held for Sale
We account for certain residential mortgage loans originated for sale at fair value on a recurring basis. The election of the fair value option aligns the accounting for the residential mortgages with the related hedges. Residential mortgage loans are valued based on quoted market prices, where available, prices for other traded mortgage loans with similar characteristics, and purchase commitments and bid information received from market participants. The prices are adjusted as necessary to include the embedded servicing value in the loans and to take into consideration the specific characteristics of certain loans that are priced based on the pricing of similar loans. These adjustments represent unobservable inputs to the valuation but are not considered significant given the relative insensitivity of the value to changes in these inputs to the fair value of the loans. Accordingly, the majority of residential mortgage loans held for sale are classified as Level 2.

Commercial Mortgage Loans Held for Sale
We account for certain commercial mortgage loans classified as held for sale in whole loan transactions at fair value. We determine the fair value of commercial mortgage loans held for sale based upon discounted cash flows. Fair value is determined using sale valuation assumptions that management believes a market participant would use in pricing the loans.

Valuation assumptions may include observable inputs based on the benchmark interest rate swap curve, whole loan sales and agency sales transactions. The significant unobservable input for commercial mortgage loans held for sale, excluding those to be sold to agencies, is management's assumption of the spread applied to the benchmark rate. The spread over the benchmark curve includes management's assumptions of the impact of credit and liquidity risk. Significant increases (decreases) in the spread applied to the benchmark would have resulted in a significantly lower (higher) asset value. The wide range of the spread over the benchmark curve is due to the varying risk and underlying property characteristics within our portfolio. Based on the significance of the unobservable input we classified this portfolio as Level 3.

For loans to be sold to agencies with servicing retained, the fair value is adjusted for the estimated servicing cash flows, which is an unobservable input. This adjustment is not considered significant given the relative insensitivity of the value to changes in the input to the fair value of the loans. Accordingly, commercial mortgage loans held for sale to agencies are classified as Level 2.

Securities Available for Sale and Trading Securities

Securities accounted for at fair value include both the available for sale and trading portfolios. We primarily use prices obtained from pricing services, dealer quotes or recent trades to determine the fair value of securities. The majority of securities were priced by third-party vendors. The third-party vendors use a variety of methods when pricing securities that incorporate relevant market data to arrive at an estimate of what a buyer in the marketplace would pay for a security under current market conditions. We monitor and validate the reliability of vendor pricing on an ongoing basis through pricing methodology reviews, including detailed reviews of the assumptions and inputs used by the vendor to price individual securities, and through price validation testing. Securities not priced by one of our pricing vendors may be valued using a dealer quote, which are also subject to price validation testing. Price validation testing is performed independent of the risk-taking function and involves corroborating the prices received from third-party vendors and dealers with prices from another third party or through other sources, such as internal valuations or sales of similar securities. Security prices are also validated through actual cash settlement upon sale of a security.

Securities are classified within the fair value hierarchy after giving consideration to the activity level in the market for the security type and the observability of the inputs used to determine the fair value. When a quoted price in an active market exists for the identical security, this price is used to determine fair value and the security is classified within Level 1 of the hierarchy. Level 1 securities include U.S. Treasury securities.

When a quoted price in an active market for the identical security is not available, fair value is estimated using either an alternative market approach, such as a recent trade or matrix pricing, or an income approach, such as a discounted cash flow pricing model. If the inputs to the valuation are based primarily on market observable information, then the security is classified within Level 2 of the hierarchy. Level 2 securities include agency debt securities, agency residential mortgage-backed securities, agency and non-agency commercial mortgage-backed securities, certain non-agency residential mortgage-backed securities, asset-backed securities collateralized by non-mortgage-related corporate and consumer loans, and other debt securities. Level 2 securities are predominantly priced by third parties, either by a pricing vendor or dealer.

In certain cases where there is limited activity or less transparency around the inputs to the valuation, securities are classified within Level 3 of the hierarchy. Securities classified as Level 3 consist primarily of non-agency residential mortgage-backed and asset-backed securities collateralized by first- and second-lien residential mortgage loans. Fair value for these securities is primarily estimated using pricing obtained from third-party vendors. In some cases, fair value is estimated using a dealer quote, by reference to prices of securities of a similar vintage and collateral type or by reference to recent sales of similar securities. Market activity for these security types is limited with little price transparency. As a result, these securities are generally valued by the third-party vendor using a discounted cash flow approach that incorporates significant unobservable inputs and observable market activity where available. Significant inputs to the valuation include prepayment projections and credit loss assumptions (default rate and loss severity) and discount rates that are deemed representative of current market conditions. Significant increases (decreases) in any of those assumptions in isolation would have resulted in a significantly lower (higher) fair value measurement.

Certain infrequently traded debt securities within Other debt securities available for sale and Trading securities are also classified in Level 3 and are included in the Insignificant Level 3 assets, net of liabilities line item in Table 87. The significant unobservable inputs used to estimate the fair value of these securities include an estimate of expected credit losses and a discount for liquidity risk. These inputs are incorporated into the fair value measurement by either increasing the spread over the benchmark curve or by applying a credit and liquidity discount to the par value of the security. Significant increases (decreases) in credit and/or liquidity risk could have resulted in a significantly lower (higher) fair value estimate.

Loans

Loans accounted for at fair value consist primarily of residential mortgage loans. These loans are generally valued similarly to residential mortgage loans held for sale and are classified as Level 2. However, similar to residential mortgage loans held for sale, if these loans are repurchased and unsalable, they are classified as Level 3. In addition, repurchased VA loans, where only a portion of the principal will be reimbursed, are classified as Level 3. The fair value is determined using a discounted cash flow calculation based on our historical loss rate. We have elected to account for certain home equity lines of credit at fair value. These loans are classified as

Level 3. Significant inputs to the valuation of these loans include credit and liquidity discount, cumulative default rate, loss severity and gross discount rate and are deemed representative of current market conditions. Significant increases (decreases) in any of these assumptions would have resulted in a significantly lower (higher) fair value measurement.

Equity Investments

Equity investments includes money market mutual funds as well as direct and indirect private equity investments. Money market mutual funds are valued based on quoted prices in active markets for identical securities and classified within Level 1 of the hierarchy. The valuation of direct and indirect private equity investments requires significant management judgment due to the absence of quoted market prices, inherent lack of liquidity and the long-term nature of such investments. Various valuation techniques are used for direct investments, including multiples of adjusted earnings of the entity, independent appraisals, anticipated financing and sale transactions with third parties, or the pricing used to value the entity in a recent financing transaction. A multiple of adjusted earnings calculation is the valuation technique utilized most frequently and is the most significant unobservable input used in such calculation. Significant decreases (increases) in the multiple of earnings could have resulted in a significantly lower (higher) fair value measurement. Direct equity investments are classified as Level 3.

Indirect investments are not redeemable; however, we receive distributions over the life of the partnerships from liquidation of the underlying investments by the investee, which we expect to occur over the next 12 years. We value indirect investments in private equity funds using the NAV practical expedient as provided in the financial statements that we receive from fund managers. Due to the time lag in our receipt of the financial information and based on a review of investments and valuation techniques applied, adjustments to the manager-provided value are made when available recent portfolio company information or market information indicates a significant change in value from that provided by the manager of the fund. Indirect investments valued using NAV are not classified in the fair value hierarchy.

Mortgage Servicing Rights (MSRs)

MSRs are carried at fair value on a recurring basis. Assumptions incorporated into the MSRs valuation model reflect management’s best estimate of factors that a market participant would use in valuing the MSRs. Although sales of MSRs do occur and can offer some market insight, MSRs do not trade in an active, open market with readily observable prices so the precise terms and conditions of sales are not available.

Residential MSRs

As a benchmark for the reasonableness of our residential MSRs fair value, we obtained opinions of value from independent brokers. These brokers provided a range (+/-10 bps) based upon their own discounted cash flow calculations of our portfolio that reflect conditions in the secondary market and any recently executed servicing transactions. We compare our internally-developed residential MSRs value to the ranges of values received from the brokers. If our residential MSRs fair value falls outside of the brokers’ ranges, management will assess whether a valuation adjustment is warranted. For the periods presented, our residential MSRs value did not fall outside of the brokers’ ranges. We consider our residential MSRs value to represent a reasonable estimate of fair value.

Due to the nature of the unobservable valuation inputs, residential MSRs are classified as Level 3. The significant unobservable inputs used in the fair value measurement of residential MSRs are constant prepayment rates and spread over the benchmark curve. Significant increases (decreases) in prepayment rates and spread over the benchmark curve would have resulted in lower (higher) fair market value of residential MSRs.

Commercial MSRs

The fair value of commercial MSRs is estimated by using a discounted cash flow model incorporating unobservable inputs for assumptions such as constant prepayment rates, discount rates and other factors. Due to the nature of the unobservable valuation inputs and the limited availability of market pricing, commercial MSRs are classified as Level 3. Significant increases (decreases) in constant prepayment rates and discount rates would have resulted in significantly lower (higher) commercial MSR value determined based on current market conditions and expectations.

Financial Derivatives

Exchange-traded derivatives are valued using quoted market prices and are classified as Level 1. The majority of derivatives that we enter into are executed over-the-counter and are valued using internal models. These derivatives are primarily classified as Level 2, as the readily observable market inputs to these models are validated to external sources, such as industry pricing services, or are corroborated through recent trades, dealer quotes, yield curves, implied volatility or other market-related data. Level 2 financial derivatives are primarily estimated using a combination of Eurodollar future prices and observable benchmark interest rate swaps to construct projected discounted cash flows.

Financial derivatives that are priced using significant management judgment or assumptions are classified as Level 3. Unobservable inputs related to interest rate contracts include probability of funding of residential mortgage loan commitments and estimated servicing cash flows of commercial and residential mortgage loan commitments. Probability of default and loss severity are the significant unobservable inputs used in the valuation of risk participation agreements. The fair values of Level 3 assets and liabilities related to these interest rate contract financial derivatives as of December 31, 2021 and 2020 are included in the Insignificant Level 3 assets, net of liabilities line item in Table 87 of this Note 15.

In connection with the sales of portions of our Visa Class B common shares, we entered into swap agreements with the purchasers of the shares to retain any future risk of decreases in the conversion rate of Class B common shares to Class A common shares resulting from increases in the escrow funded by Visa to pay for the costs of resolution of specified litigation (see Note 21 Legal Proceedings). These swaps also require PNC to make periodic payments based on the market price of the Class A common shares at a fixed rate of interest (in certain cases subject to step-up provisions) until the Visa litigation is resolved. An increase in the estimated length of litigation resolution date, a decrease in the estimated conversion rate, or an increase in the estimated growth rate of the Class A share price would have had a negative impact on the fair value of the swaps and vice versa.

The fair values of our derivatives include a credit valuation adjustment to reflect our own and our counterparties' nonperformance risk. Our credit valuation adjustment is computed using credit default swap spreads, in conjunction with internal historical recovery observations.

Other Assets and Liabilities
Other assets held at fair value on a recurring basis primarily include assets related to PNC's deferred compensation and supplemental incentive savings plans.

The assets related to PNC's deferred compensation and supplemental incentive savings plans primarily consist of a prepaid forward contract referencing an amount of shares of PNC stock, equity mutual funds and fixed income funds, and are valued based on the underlying investments. These assets are valued either by reference to the market price of PNC's stock or by using the quoted market prices for investments other than PNC's stock and are classified in Levels 1 and 2.

All Level 3 other assets and liabilities are included in the Insignificant Level 3 assets, net of liabilities line item in Table 87 in this Note 15.

Other Borrowed Funds
Other borrowed funds primarily consist of U.S. Treasury securities sold short which are classified as Level 1. Other borrowed funds also includes the related liability for certain repurchased loans for which we have elected the fair value option and are classified as either Level 2 or Level 3, consistent with the level classification of the corresponding loans. All Level 3 amounts are included in the Insignificant Level 3 assets, net of liabilities line item in Table 87 in this Note 15.

The following table summarizes our assets and liabilities measured at fair value on a recurring basis, including instruments for which we have elected the fair value option.

Table 85: Fair Value Measurements – Recurring Basis Summary

	December 31, 2021				December 31, 2020			
In millions	Level 1	Level 2	Level 3	Total Fair Value	Level 1	Level 2	Level 3	Total Fair Value
Assets								
Residential mortgage loans held for sale		$ 1,221	$ 81	$ 1,302		$ 691	$ 163	$ 854
Commercial mortgage loans held for sale		526	49	575		305	57	362
Securities available for sale								
U.S. Treasury and government agencies	$ 41,873	4,291		46,164	$ 16,675	4,036		20,711
Residential mortgage-backed								
Agency		67,632		67,632		48,911		48,911
Non-agency		61	1,097	1,158		136	1,365	1,501
Commercial mortgage-backed								
Agency		1,773		1,773		2,688		2,688
Non-agency		3,433	3	3,436		3,678	11	3,689
Asset-backed		6,246	163	6,409		4,951	199	5,150
Other		4,895	69	4,964		4,636	72	4,708
Total securities available for sale	41,873	88,331	1,332	131,536	16,675	69,036	1,647	87,358
Loans		617	884	1,501		718	647	1,365
Equity investments (a)	1,373		1,680	3,231	1,070		1,263	2,629
Residential mortgage servicing rights			1,078	1,078			673	673
Commercial mortgage servicing rights			740	740			569	569
Trading securities (b)	250	1,601		1,851	548	1,690		2,238
Financial derivatives (b) (c)	5	5,109	38	5,152		6,415	118	6,533
Other assets	404	114		518	373	81		454
Total assets (d)	$ 43,905	$ 97,519	$ 5,882	$ 147,484	$ 18,666	$ 78,936	$ 5,137	$ 103,035
Liabilities								
Other borrowed funds	$ 725	$ 45	$ 3	$ 773	$ 661	$ 44	$ 2	$ 707
Financial derivatives (c) (e)		3,285	285	3,570		2,483	273	2,756
Other liabilities			175	175			43	43
Total liabilities (f)	$ 725	$ 3,330	$ 463	$ 4,518	$ 661	$ 2,527	$ 318	$ 3,506

(a) Certain investments that are measured at fair value using the NAV per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.
(b) Included in Other assets on the Consolidated Balance Sheet.
(c) Amounts at December 31, 2021 and 2020 are presented gross and are not reduced by the impact of legally enforceable master netting agreements that allow us to net positive and negative positions and cash collateral held or placed with the same counterparty. See Note 16 Financial Derivatives for additional information related to derivative offsetting.
(d) Total assets at fair value as a percentage of total consolidated assets was 26% and 22% at December 31, 2021 and 2020, respectively. Level 3 assets as a percentage of total assets at fair value was 4% and 5% as of December 31, 2021 and 2020, respectively. Level 3 assets as a percentage of total consolidated assets was 1% at both December 31, 2021 and 2020.
(e) Included in Other liabilities on the Consolidated Balance Sheet.
(f) Total liabilities at fair value as a percentage of total consolidated liabilities was 1% at both December 31, 2021 and 2020. Level 3 liabilities as a percentage of total liabilities at fair value was 10% and 9% as of December 31, 2021 and 2020, respectively. Level 3 liabilities as a percentage of total consolidated liabilities was less than 1% at both December 31, 2021 and 2020.

Reconciliations of assets and liabilities measured at fair value on a recurring basis using Level 3 inputs for 2021 and 2020 follow

Table 86: Reconciliation of Level 3 Assets and Liabilities

Year Ended December 31, 2021

		Total realized / unrealized gains or losses for the period (a)										
Level 3 Instruments Only In millions	Fair Value Dec. 31, 2020	Included in Earnings	Included in Other comprehensive income (b)	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Impact from BBVA Acquisition	Fair Value Dec. 31, 2021	Unrealized gains / losses for the period on assets and liabilities held on Consolidated Balance Sheet at Dec. 31, 2021 (a) (c)
Assets												
Residential mortgage loans held for sale	$ 163	$ (1)		$ 47	$ (83)		$ (41)	$ 18	$ (22) (e)		$ 81	$ (1)
Commercial mortgage loans held for sale	57				(6)		(2)				49	(1)
Other consumer loans held for sale					(256)					$ 256		
Securities available for sale												
Residential mortgage-backed non-agency	1,365	37	$ 6				(311)				1,097	
Commercial mortgage-backed non-agency	11		(8)								3	
Asset-backed	199	2	9				(47)				163	
Other	72		1	6			(10)				69	
Total securities available for sale	1,647	39	8	6			(368)				1,332	
Loans	647	45		124	(15)		(194)		(14) (e)	291	884	44
Equity investments	1,263	627		573	(783)						1,680	338
Residential mortgage servicing rights	673	192		411		$ 87	(320)			35	1,078	192
Commercial mortgage servicing rights	569	162		41		87	(119)				740	162
Financial derivatives	118	83		5			(174)			6	38	113
Total assets	$ 5,137	$ 1,147	$ 8	$ 1,207	$ (1,143)	$ 174	$ (1,218)	$ 18	$ (36)	$ 588	$ 5,882	$ 847
Liabilities												
Other borrowed funds	$ 2					$ 5	$ (4)				$ 3	
Financial derivatives	273	$ 145			$ 6		(146)			$ 7	285	$ 158
Other liabilities	43	151				321	(340)				175	111
Total liabilities	$ 318	$ 296			$ 6	$ 326	$ (490)			$ 7	$ 463	$ 269
Net gains (losses)		$ 851 (f)										$ 578 (g)

Year Ended December 31, 2020

Level 3 Instruments Only In millions	Fair Value Dec. 31, 2019	Total realized / unrealized gains or losses for the period (a): Included in Earnings	Total realized / unrealized gains or losses for the period (a): Included in Other comprehensive income (b)	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Fair Value Dec. 31, 2020	Unrealized gains / losses for the period on assets and liabilities held on Consolidated Balance Sheet at Dec. 31, 2020 (a) (c)
Assets											
Residential mortgage loans held for sale	$ 2	$ (1)		$ 124	$ (13)		$ (21)	$ 93	$ (21) (e)	$ 163	$ (1)
Commercial mortgage loans held for sale	64	(2)					(5)			57	(2)
Securities available for sale											
Residential mortgage-backed non-agency	1,741	53	$ (75)				(354)			1,365	
Commercial mortgage-backed non-agency			(8)					19		11	
Asset-backed	240	6	(7)				(40)			199	
Other	74	1	(4)	4			(3)			72	
Total securities available for sale	2,055	60	(94)	4			(397)	19		1,647	
Loans	300	28		161	(39)		280 (d)		(83) (e)	647	28
Equity investments	1,276	(63)		229	(179)					1,263	(69)
Residential mortgage servicing rights	995	(377)		208		$ 45	(198)			673	(377)
Commercial mortgage servicing rights	649	(109)		44		100	(115)			569	(109)
Financial derivatives	54	209		11			(156)			118	229
Total assets	$ 5,395	$ (255)	$ (94)	$ 781	$ (231)	$ 145	$ (612)	$ 112	$ (104)	$ 5,137	$ (301)
Liabilities											
Other borrowed funds	$ 7					$ 28	$ (33)			$ 2	
Financial derivatives	200	$ 189			$ 4		(120)			273	$ 186
Other liabilities	137	17				96	(207)			43	1
Total liabilities	$ 344	$ 206			$ 4	$ 124	$ (360)			$ 318	$ 187
Net gains (losses)		$ (461) (f)									$ (488) (g)

(a) Losses for assets are bracketed while losses for liabilities are not.
(b) The difference in unrealized gains and losses for the period included in Other comprehensive income and changes in unrealized gains and losses for the period included in Other comprehensive income for securities available for sale held at the end of the reporting period were insignificant.
(c) The amount of the total gains or losses for the period included in earnings that is attributable to the change in unrealized gains or losses related to those assets and liabilities held at the end of the reporting period.
(d) Upon adoption of ASU 2016-13 - Credit Losses, we discontinued the accounting for purchased impaired loans and elected the one-time fair value option election for some of these loans and certain nonperforming loans.
(e) Residential mortgage loan transfers out of Level 3 are primarily driven by residential mortgage loans transferring to OREO as well as reclassification of mortgage loans held for sale to held for investment.
(f) Net gains (losses) realized and unrealized included in earnings related to Level 3 assets and liabilities included amortization and accretion. The amortization and accretion amounts were included in Interest income on the Consolidated Income Statement and the remaining net gains (losses) realized and unrealized were included in Noninterest income on the Consolidated Income Statement.
(g) Net unrealized gains (losses) related to assets and liabilities held at the end of the reporting period were included in Noninterest income on the Consolidated Income Statement.

An instrument's categorization within the hierarchy is based on the lowest level of input that is significant to the fair value measurement. Changes from one quarter to the next related to the observability of inputs to a fair value measurement may result in a reclassification (transfer) of assets or liabilities between hierarchy levels.

Quantitative information about the significant unobservable inputs within Level 3 recurring assets and liabilities follows:

Table 87: Fair Value Measurements – Recurring Quantitative Information

December 31, 2021

Level 3 Instruments Only Dollars in millions	Fair Value	Valuation Techniques	Unobservable Inputs	Range (Weighted-Average) (a)
Commercial mortgage loans held for sale	$ 49	Discounted cash flow	Spread over the benchmark curve (b)	555bps - 15,990bps (9,996bps)
Residential mortgage-backed non-agency securities	1,097	Priced by a third-party vendor using a discounted cash flow pricing model	Constant prepayment rate	1.0% - 30.7% (11.3%)
			Constant default rate	0.0% - 16.9% (4.6%)
			Loss severity	20.0% - 96.4% (47.6%)
			Spread over the benchmark curve (b)	163bps weighted-average
Asset-backed securities	163	Priced by a third-party vendor using a discounted cash flow pricing model	Constant prepayment rate	1.0% - 40.0% (11.1%)
			Constant default rate	1.4% - 20.0% (3.2%)
			Loss severity	8.0% - 100.0% (57.4%)
			Spread over the benchmark curve (b)	182bps weighted-average
Loans - Residential real estate	622	Consensus pricing (c)	Cumulative default rate	3.6% - 100.0% (74.2%)
			Loss severity	0.0% - 100.0% (6.9%)
			Discount rate	4.8% - 6.8% (5.2%)
Loans - Residential real estate	109	Discounted cash flow	Loss severity	6.0% weighted-average
			Discount rate	3.5% weighted-average
Loans - Home equity	28	Consensus pricing (c)	Cumulative default rate	3.6% - 100.0% (75.8%)
			Loss severity	0.0% - 98.4% (17.7%)
			Discount rate	4.8% - 6.8% (6.0%)
Loans - Home equity	125	Consensus pricing (c)	Credit and liquidity discount	0.5% - 100.0% (47.3%)
Equity investments	1,680	Multiple of adjusted earnings	Multiple of earnings	5.0x - 14.4x (8.8x)
Residential mortgage servicing rights	1,078	Discounted cash flow	Constant prepayment rate	0.0% - 41.0% (12.6%)
			Spread over the benchmark curve (b)	249bps - 2,218bps (857bps)
Commercial mortgage servicing rights	740	Discounted cash flow	Constant prepayment rate	5.0% - 15.5% (5.5%)
			Discount rate	5.4% - 8.0% (7.8%)
Financial derivatives - Swaps related to sales of certain Visa Class B common shares	(277)	Discounted cash flow	Estimated conversion factor of Visa Class B shares into Class A shares	161.8% weighted-average
			Estimated annual growth rate of Visa Class A share price	16.0%
			Estimated length of litigation resolution date	Q2 2023
Insignificant Level 3 assets, net of liabilities (d)	5			
Total Level 3 assets, net of liabilities (e)	$ 5,419			

December 31, 2020

Level 3 Instruments Only Dollars in millions	Fair Value	Valuation Techniques	Unobservable Inputs	Range (Weighted-Average) (a)
Commercial mortgage loans held for sale	$ 57	Discounted cash flow	Spread over the benchmark curve (b)	630bps - 5,275bps (3,406bps)
Residential mortgage-backed non-agency securities	1,365	Priced by a third-party vendor using a discounted cash flow pricing model	Constant prepayment rate	1.0% - 37.6% (8.6%)
			Constant default rate	0.0% - 12.2% (4.7%)
			Loss severity	25.0% - 95.7% (48.8%)
			Spread over the benchmark curve (b)	242bps weighted-average
Asset-backed securities	199	Priced by a third-party vendor using a discounted cash flow pricing model	Constant prepayment rate	1.0% - 22.0% (7.4%)
			Constant default rate	1.0% - 6.0% (3.3%)
			Loss severity	30.0% - 100.0% (58.1%)
			Spread over the benchmark curve (b)	291bps weighted-average
Loans - Residential real estate	434	Consensus pricing (c)	Cumulative default rate	3.6% - 100.0% (82.1%)
			Loss severity	0.0% - 100.0% (11.2%)
			Discount rate	4.8% - 6.8% (5.1%)
Loans - Residential real estate	132	Discounted cash flow	Loss severity	8.0% weighted-average
			Discount rate	3.2% weighted-average
Loans - Home equity	21	Consensus pricing (c)	Cumulative default rate	3.6% - 100.0% (88.5%)
			Loss severity	0.0% - 98.4% (33.3%)
			Discount rate	4.8% - 6.8% (6.3%)
Loans - Home equity	60	Consensus pricing (c)	Credit and liquidity discount	17.5% - 97.0% (57.7%)
Equity investments	1,263	Multiple of adjusted earnings	Multiple of earnings	5.0x - 15.9x (8.7x)
Residential mortgage servicing rights	673	Discounted cash flow	Constant prepayment rate	0.0% - 77.5% (21.1%)
			Spread over the benchmark curve (b)	325bps - 2,783bps (922bps)
Commercial mortgage servicing rights	569	Discounted cash flow	Constant prepayment rate	4.0% - 16.1% (4.9%)
			Discount rate	4.7% - 7.8% (7.3%)
Financial derivatives - Swaps related to sales of certain Visa Class B common shares	(252)	Discounted cash flow	Estimated conversion factor of Visa Class B shares into Class A shares	162.3% weighted-average
			Estimated annual growth rate of Visa Class A share price	16.0%
			Estimated length of litigation resolution date	Q2 2022
Insignificant Level 3 assets, net of liabilities (d)	298			
Total Level 3 assets, net of liabilities (e)	$ 4,819			

(a) Unobservable inputs were weighted by the relative fair value of the instruments.
(b) The assumed yield spread over the benchmark curve for each instrument is generally intended to incorporate non-interest rate risks, such as credit and liquidity risks.
(c) Consensus pricing refers to fair value estimates that are generally internally developed using information such as dealer quotes or other third-party provided valuations or comparable asset prices.
(d) Represents the aggregate amount of Level 3 assets and liabilities measured at fair value on a recurring basis that are individually and in the aggregate insignificant. The amount includes certain financial derivative assets and liabilities, trading securities, other securities, residential mortgage loans held for sale, other assets, other borrowed funds and other liabilities.
(e) Consisted of total Level 3 assets of $5.9 billion and total Level 3 liabilities of $0.5 billion as of December 31, 2021 and $5.1 billion and $0.3 billion as of December 31, 2020, respectively.

Financial Assets Accounted for at Fair Value on a Nonrecurring Basis

We may be required to measure certain financial assets at fair value on a nonrecurring basis. These adjustments to fair value usually result from the application of lower of amortized cost or fair value accounting or write-downs of individual assets due to impairment and are included in Table 88.

Nonaccrual Loans
The carrying value of nonaccrual loans represents the fair value of those loans which have been adjusted due to impairment. The impairment is primarily based on the appraised value of the collateral.

Appraisals are obtained by licensed or certified appraisers at least annually and more recently in certain instances. All third-party appraisals are reviewed and any adjustments to the initial appraisal are incorporated into the final issued appraisal report. In instances where an appraisal is not obtained, collateral value is determined consistent with external third-party appraisal standards by an internal person independent of the asset manager.

OREO and Foreclosed Assets
The carrying value of OREO and foreclosed assets includes valuation adjustments recorded subsequent to the transfer to OREO and foreclosed assets. These valuation adjustments are based on the fair value less cost to sell of the property. Fair value is based on appraised value or sales price and the appraisal process for OREO and foreclosed assets is the same as described above for nonaccrual loans.

Long-Lived Assets
Long-lived assets consists of buildings for which valuation adjustments were recorded during the period. A facility classified as held for use is impaired to the extent its carrying value is not recoverable and exceeds fair value. Valuation adjustments on buildings held for sale are based on the fair value of the property less an estimated cost to sell and are recorded subsequent to the transfer of the asset to held for sale status. Fair value is determined either by a third-party appraisal, recent sales offer, changes in market or property conditions, or, where we have agreed to sell the building to a third party, the contractual sales price. Impairment on these long-lived assets is recorded in Other noninterest expense on our Consolidated Income Statement.

Assets measured at fair value on a nonrecurring basis follow:

Table 88: Fair Value Measurements – Nonrecurring (a) (b) (c)

Year ended December 31 In millions	Fair Value		Gains (Losses)		
	2021	2020	2021	2020	2019
Assets					
Nonaccrual loans	$ 348	$ 332	$ (4)	$ (111)	$ (76)
OREO and foreclosed assets	6	18		(2)	(5)
Long-lived assets	103	20	(45)	(27)	(3)
Total assets	$ 457	$ 370	$ (49)	$ (140)	$ (84)

(a) All Level 3 for the periods presented.
(b) Valuation techniques applied were fair value of property or collateral.
(c) Unobservable inputs used were appraised value/sales price, broker opinions or projected income/required improvement costs. Additional quantitative information was not meaningful for the periods presented.

Financial Instruments Accounted for under Fair Value Option

We elect the fair value option to account for certain financial instruments. For more information on these financial instruments for which the fair value option election has been made, refer to the Fair Value Measurement section of this Note 15. These financial instruments are initially measured at fair value. Gains and losses from initial measurement and any changes in fair value are subsequently recognized in earnings.

Interest income related to changes in the fair values of these financial instruments is recorded on the Consolidated Income Statement in Other interest income, except for certain Residential mortgage loans, for which income is also recorded in Loan interest income. Changes in the value on prepaid forward contracts included in Other assets is reported in Noninterest expense and interest expense on the Other borrowed funds is reported in Borrowed funds interest expense.

Fair values and aggregate unpaid principal balances of items for which we elected the fair value option follow

Table 89: Fair Value Option – Fair Value and Principal Balances

In millions	December 31, 2021 Fair Value	December 31, 2021 Aggregate Unpaid Principal Balance	December 31, 2021 Difference	December 31, 2020 Fair Value	December 31, 2020 Aggregate Unpaid Principal Balance	December 31, 2020 Difference
Assets						
Residential mortgage loans held for sale						
Accruing loans less than 90 days past due	$ 1,249	$ 1,219	$ 30	$ 831	$ 793	$ 38
Accruing loans 90 days or more past due	6	6		4	4	
Nonaccrual loans	47	57	(10)	20	24	(4)
Total	$ 1,302	$ 1,282	$ 20	$ 855	$ 821	$ 34
Commercial mortgage loans held for sale (a)						
Accruing loans less than 90 days past due	$ 575	$ 580	$ (5)	$ 357	$ 370	$ (13)
Nonaccrual loans				5	6	(1)
Total	$ 575	$ 580	$ (5)	$ 362	$ 376	$ (14)
Loans						
Accruing loans less than 90 days past due	$ 487	$ 498	$ (11)	$ 519	$ 530	$ (11)
Accruing loans 90 days or more past due	262	278	(16)	283	295	(12)
Nonaccrual loans	752	1,028	(276)	563	820	(257)
Total	$ 1,501	$ 1,804	$ (303)	$ 1,365	$ 1,645	$ (280)
Other assets	$ 105	$ 107	$ (2)	$ 81	$ 69	$ 12
Liabilities						
Other borrowed funds	$ 30	$ 30		$ 32	$ 33	$ (1)

(a) There were no accruing loans 90 days or more past due within this category at December 31, 2021 or December 31, 2020.

The changes in fair value for items for which we elected the fair value option are as follows:

Table 90: Fair Value Option – Changes in Fair Value (a)

Year ended December 31 In millions	Gains (Losses) 2021	2020	2019
Assets			
Residential mortgage loans held for sale	$ 152	$ 198	$ 84
Commercial mortgage loans held for sale	$ 115	$ 128	$ 61
Loans	$ 80	$ 44	$ 23
Other assets	$ 28	$ (3)	$ 40

(a) The impact on earnings of offsetting hedged items or hedging instruments is not reflected in these amounts.

Additional Fair Value Information Related to Financial Instruments Not Recorded at Fair Value

This section presents fair value information for all other financial instruments that are not recorded on the Consolidated Balance Sheet at fair value. We used the following methods and assumptions to estimate the fair value amounts for these financial instruments.

Cash and Due from Banks and Interest-earning Deposits with Banks
Due to their short-term nature, the carrying amounts for Cash and due from banks and Interest-earning deposits with banks reported on our Consolidated Balance Sheet approximate fair value.

Securities Held to Maturity
We primarily use prices obtained from pricing services, dealer quotes or recent trades to determine the fair value of securities. Refer to the Fair Value Measurement section of this Note 15 for additional information relating to our pricing processes and procedures.

Net Loans
Fair values are estimated based on the discounted value of expected net cash flows incorporating assumptions about prepayment rates, net credit losses and servicing fees. Nonaccrual loans are valued at their estimated recovery value. Loans are presented net of the ALLL.

Other Assets
The carrying value of Other assets, which include accrued interest receivable, cash collateral, federal funds sold and resale agreements, certain loans held for sale, and FHLB and FRB stock, approximates fair value. The aggregate carrying value of our FHLB and FRB stock was $1.3 billion and $1.1 billion at December 31, 2021 and 2020, respectively.

Deposits
For time deposits, fair values are estimated by discounting contractual cash flows using current market rates for instruments with similar maturities. For deposits with no defined maturity, such as noninterest-bearing and interest-bearing demand and interest-bearing money market and savings deposits, carrying values approximate fair values.

Borrowed Funds
For short-term borrowed funds, including federal funds purchased, commercial paper, repurchase agreements and certain other short-term borrowings and payables, carrying value approximates fair value. For long-term borrowed funds, quoted market prices are used, when available, to estimate fair value. When quoted market prices are not available, fair value is estimated based on current market interest rates and credit spreads for debt with similar terms and maturities.

Unfunded Lending Related Commitments and Letters of Credit
The fair value of unfunded lending related commitments and letters of credit is determined from a market participant's view including the impact of changes in interest rates and credit. We establish a liability on these facilities related to the creditworthiness of our counterparty.

Other Liabilities
Other liabilities includes interest-bearing cash collateral held related to derivatives and other accrued liabilities. Due to its short-term nature, the carrying value of Other liabilities reported on our Consolidated Balance Sheet approximates fair value.

The carrying amounts and estimated fair values, as well as the level within the fair value hierarchy, of these financial instruments as of December 31, 2021 and 2020 are as follows:

Table 91: Additional Fair Value Information Related to Other Financial Instruments

In millions	Carrying Amount	Fair Value Total	Level 1	Level 2	Level 3
December 31, 2021					
Assets					
Cash and due from banks	$ 8,004	$ 8,004	$ 8,004		
Interest-earning deposits with banks	74,250	74,250		$ 74,250	
Securities held to maturity	1,429	1,522	890	456	$ 176
Net loans (excludes leases)	275,874	280,498			280,498
Other assets	4,205	4,204		4,141	63
Total assets	$ 363,762	$ 368,478	$ 8,894	$ 78,847	$ 280,737
Liabilities					
Time deposits	$ 17,366	$ 17,180		$ 17,180	
Borrowed funds	30,011	30,616		28,936	$ 1,680
Unfunded lending related commitments	662	662			662
Other liabilities	449	449		449	
Total liabilities	$ 48,488	$ 48,907		$ 46,565	$ 2,342
December 31, 2020					
Assets					
Cash and due from banks	$ 7,017	$ 7,017	$ 7,017		
Interest-earning deposits with banks	85,173	85,173		$ 85,173	
Securities held to maturity	1,445	1,604	920	489	$ 195
Net loans (excludes leases)	228,788	233,688			233,688
Other assets	3,601	3,600		3,559	41
Total assets	$ 326,024	$ 331,082	$ 7,937	$ 89,221	$ 233,924
Liabilities					
Time deposits	$ 19,692	$ 19,662		$ 19,662	
Borrowed funds	36,488	37,192		35,571	$ 1,621
Unfunded lending related commitments	584	584			584
Other liabilities	413	413		413	
Total liabilities	$ 57,177	$ 57,851		$ 55,646	$ 2,205

The aggregate fair values in Table 91 represent only a portion of the total market value of our assets and liabilities as, in accordance with the guidance related to fair values about financial instruments, we exclude the following:

- financial instruments recorded at fair value on a recurring basis (as they are disclosed in Table 85),
- investments accounted for under the equity method,
- equity securities without a readily determinable fair value that apply for the alternative measurement approach to fair value under ASU 2016-01,
- real and personal property,
- lease financing,
- loan customer relationships,
- deposit customer intangibles,
- mortgage servicing rights (MSRs),
- retail branch networks,
- fee-based businesses, such as asset management and brokerage,
- trademarks and brand names,
- trade receivables and payables due in one year or less,
- deposit liabilities with no defined or contractual maturities under ASU 2016-01, and
- insurance contracts.

NOTE 16 FINANCIAL DERIVATIVES

We use a variety of financial derivatives to both mitigate exposure to market (primarily interest rate) and credit risks inherent in our business activities, as well as to facilitate customer risk management activities. We manage these risks as part of our overall asset and liability management process and through our credit policies and procedures. Derivatives represent contracts between parties that usually require little or no initial net investment and result in one party delivering cash or another type of asset to the other party based on a notional amount and an underlying as specified in the contract.

Derivative transactions are often measured in terms of notional amount, but this amount is generally not exchanged and it is not recorded on the balance sheet. The notional amount is the basis to which the underlying is applied to determine required payments under the derivative contract. The underlying is a referenced interest rate, security price, credit spread or other index. Residential and commercial real estate loan commitments associated with loans to be sold also qualify as derivative instruments.

The following table presents the notional and gross fair value amounts of all derivative assets and liabilities held by us:

Table 92: Total Gross Derivatives (a)

	December 31, 2021			December 31, 2020		
In millions	Notional /Contract Amount	Asset Fair Value (b)	Liability Fair Value (c)	Notional /Contract Amount	Asset Fair Value (b)	Liability Fair Value (c)
Derivatives used for hedging						
Interest rate contracts (d):						
Fair value hedges	$ 23,345			$ 24,153		
Cash flow hedges	48,961	$ 15	$ 14	22,875	$ 14	
Foreign exchange contracts:						
Net investment hedges	1,113		24	1,075		$ 22
Total derivatives designated for hedging	$ 73,419	$ 15	$ 38	$ 48,103	$ 14	$ 22
Derivatives not used for hedging						
Derivatives used for mortgage banking activities (e):						
Interest rate contracts:						
Swaps	$ 35,623			$ 50,511		
Futures (f)	4,592			2,841		
Mortgage-backed commitments	9,917	$ 55	$ 31	11,288	$ 147	$ 77
Other	12,225	46	12	1,831	11	2
Total interest rate contracts	62,357	101	43	66,471	158	79
Derivatives used for customer-related activities:						
Interest rate contracts:						
Swaps	297,711	3,335	1,520	280,125	5,475	1,601
Futures (f)	907			1,235		
Mortgage-backed commitments	4,147	5	6	4,178	11	14
Other	25,718	125	72	20,125	193	88
Total interest rate contracts	328,483	3,465	1,598	305,663	5,679	1,703
Commodity contracts:						
Swaps	8,840	1,150	1,161	6,149	350	323
Other	3,128	213	212	2,770	61	61
Total commodity contracts	11,968	1,363	1,373	8,919	411	384
Foreign exchange contracts and other	27,563	199	179	26,620	267	243
Total derivatives for customer-related activities	368,014	5,027	3,150	341,202	6,357	2,330
Derivatives used for other risk management activities:						
Foreign exchange contracts and other	11,512	9	339	10,931	4	325
Total derivatives not designated for hedging	$ 441,883	$ 5,137	$ 3,532	$ 418,604	$ 6,519	$ 2,734
Total gross derivatives	$ 515,302	$ 5,152	$ 3,570	$ 466,707	$ 6,533	$ 2,756
Less: Impact of legally enforceable master netting agreements		928	928		720	720
Less: Cash collateral received/paid		604	1,657		1,434	1,452
Total derivatives		$ 3,620	$ 985		$ 4,379	$ 584

(a) Centrally cleared derivatives are settled in cash daily and result in no derivative asset or derivative liability being recognized on our Consolidated Balance Sheet.
(b) Included in Other assets on our Consolidated Balance Sheet.
(c) Included in Other liabilities on our Consolidated Balance Sheet.
(d) Represents primarily swaps.
(e) Includes both residential and commercial mortgage banking activities.
(f) Futures contracts are settled in cash daily and result in no derivative asset or derivative liability being recognized on our Consolidated Balance Sheet.

All derivatives are carried on our Consolidated Balance Sheet at fair value. Derivative balances are presented on the Consolidated Balance Sheet on a net basis taking into consideration the effects of legally enforceable master netting agreements and, when appropriate, any related cash collateral exchanged with counterparties. Further discussion regarding the offsetting rights associated with these legally enforceable master netting agreements is included in the Offsetting and Counterparty Credit Risk section of this Note 16. Any nonperformance risk, including credit risk, is included in the determination of the estimated net fair value of the derivatives. Further discussion on how derivatives are accounted for is included in Note 1 Accounting Policies.

Derivatives Designated As Hedging Instruments

Certain derivatives used to manage interest rate and foreign exchange risk as part of our asset and liability risk management activities are designated as accounting hedges. Derivatives hedging the risks associated with changes in the fair value of assets or liabilities are considered fair value hedges, derivatives hedging the variability of expected future cash flows are considered cash flow hedges, and derivatives hedging a net investment in a foreign subsidiary are considered net investment hedges. Designating derivatives as accounting hedges allows for gains and losses on those derivatives to be recognized in the same period and in the same income statement line item as the earnings impact of the hedged items.

Fair Value Hedges

We enter into receive-fixed, pay-variable interest rate swaps to hedge changes in the fair value of outstanding fixed-rate debt caused by fluctuations in market interest rates. We also enter into pay-fixed, receive-variable interest rate swaps and zero-coupon swaps to hedge changes in the fair value of fixed rate and zero-coupon investment securities caused by fluctuations in market interest rates. Gains and losses on the interest rate swaps designated in these hedge relationships, along with the offsetting gains and losses on the hedged items attributable to the hedged risk, are recognized in current earnings within the same income statement line item.

Cash Flow Hedges

We enter into receive-fixed, pay-variable interest rate swaps and interest rate caps and floors to modify the interest rate characteristics of designated commercial loans from variable to fixed in order to reduce the impact of changes in future cash flows due to market interest rate changes. We also periodically enter into forward purchase and sale contracts to hedge the variability of the consideration that will be paid or received related to the purchase or sale of investment securities. The forecasted purchase or sale is consummated upon gross settlement of the forward contract itself. For these cash flow hedges, gains and losses on the hedging instruments are recorded in AOCI and are then reclassified into earnings in the same period the hedged cash flows affect earnings and within the same income statement line as the hedged cash flows.

In the 12 months that follow December 31, 2021, we expect to reclassify net derivative gains of $187 million pretax, or $144 million after-tax, from AOCI to interest income for these cash flow hedge strategies. This reclassified amount could differ from amounts actually recognized due to changes in interest rates, hedge de-designations and the addition of other hedges subsequent to December 31, 2021. As of December 31, 2021, the maximum length of time over which forecasted transactions are hedged is ten years.

Further detail regarding gains (losses) related to our fair value and cash flow hedge derivatives is presented in the following table:

Table 93: Gains (Losses) Recognized on Fair Value and Cash Flow Hedges in the Consolidated Income Statement (a) (b)

	Location and Amount of Gains (Losses) Recognized in Income			
	Interest Income		Interest Expense	Noninterest Income
In millions	Loans	Investment Securities	Borrowed Funds	Other
Year ended December 31, 2021				
Total amounts on the Consolidated Income Statement	$ 9,007	$ 1,834	$ 361	$ 1,840
Gains (losses) on fair value hedges recognized on:				
Hedged items (c)		$ (5)	$ 937	
Derivatives		$ 9	$ (993)	
Amounts related to interest settlements on derivatives		$ (4)	$ 521	
Gains (losses) on cash flow hedges (d):				
Amount of derivative gains (losses) reclassified from AOCI	$ 376	$ 57		$ 61
Year ended December 31, 2020				
Total amounts on the Consolidated Income Statement	$ 8,927	$ 2,041	$ 718	$ 1,364
Gains (losses) on fair value hedges recognized on:				
Hedged items (c)		$ 208	$ (1,059)	
Derivatives		$ (202)	$ 959	
Amounts related to interest settlements on derivatives		$ (9)	$ 480	
Gains (losses) on cash flow hedges (d):				
Amount of derivative gains (losses) reclassified from AOCI	$ 375	$ 40		$ 6
Year ended December 31, 2019				
Total amounts on the Consolidated Income Statement	$ 10,525	$ 2,426	$ 1,811	$ 1,473
Gains (losses) on fair value hedges recognized on:				
Hedged items (c)		$ 187	$ (808)	
Derivatives		$ (178)	$ 659	
Amounts related to interest settlements on derivatives		$ 13	$ 79	
Gains (losses) on cash flow hedges (d):				
Amount of derivative gains (losses) reclassified from AOCI	$ 9	$ 9		$ 19

(a) For all periods presented, there were no components of derivative gains or losses excluded from the assessment of hedge effectiveness for any of the fair value or cash flow hedge strategies.
(b) All cash flow and fair value hedge derivatives were interest rate contracts for the periods presented.
(c) Includes an insignificant amount of fair value hedge adjustments related to discontinued hedge relationships.
(d) For all periods presented, there were no gains or losses from cash flow hedge derivatives reclassified to income because it became probable that the original forecasted transaction would not occur.

Detail regarding the impact of fair value hedge accounting on the carrying value of the hedged items is presented in the following table:

Table 94: Hedged Items - Fair Value Hedges

	December 31, 2021		December 31, 2020	
In millions	Carrying Value of the Hedged Items	Cumulative Fair Value Hedge Adjustment included in the Carrying Value of Hedged Items (a)	Carrying Value of the Hedged Items	Cumulative Fair Value Hedge Adjustment included in the Carrying Value of Hedged Items (a)
Investment securities - available for sale (b)	$ 2,655	$ 23	$ 2,785	$ 30
Borrowed funds	$ 24,259	$ 663	$ 25,797	$ 1,611

(a) Includes $(0.1) billion of fair value hedge adjustments primarily related to discontinued borrowed funds hedge relationships at both December 31, 2021 and 2020.
(b) Carrying value shown represents amortized cost.

Net Investment Hedges

We enter into foreign currency forward contracts to hedge non-U.S. dollar net investments in foreign subsidiaries against adverse changes in foreign exchange rates. We assess whether the hedging relationship is highly effective in achieving offsetting changes in the value of the hedge and hedged item by qualitatively verifying that the critical terms of the hedge and hedged item match at the inception of the hedging relationship and on an ongoing basis. Net investment hedge derivatives are classified as foreign exchange contracts. There were no components of derivative gains or losses excluded from the assessment of the hedge effectiveness for all periods presented.

Derivatives Not Designated As Hedging Instruments

Residential mortgage loans that will be sold in the secondary market, and the related loan commitments, which are considered derivatives, are accounted for at fair value. Changes in the fair value of the loans and commitments due to interest rate risk are hedged with forward contracts to sell mortgage-backed securities, as well as U.S. Treasury and Eurodollar futures and options. Gains and losses on the loans and commitments held for sale and the derivatives used to economically hedge them are included in Residential mortgage noninterest income on the Consolidated Income Statement.

Residential mortgage servicing rights are accounted for at fair value with changes in fair value influenced primarily by changes in interest rates. Derivatives used to hedge the fair value of residential mortgage servicing rights include interest rate futures, swaps, options, and forward contracts to purchase mortgage-backed securities. Gains and losses on residential mortgage servicing rights and the related derivatives used for hedging are included in Residential mortgage noninterest income.

Commercial mortgage loans held for sale and the related loan commitments, which are considered derivatives, are accounted for at fair value. Derivatives used to economically hedge these loans and commitments from changes in fair value due to interest rate risk include forward loan sale contracts and interest rate swaps. Gains and losses on the commitments, loans and derivatives are included in Other noninterest income. Derivatives used to economically hedge the change in value of commercial mortgage servicing rights include interest rate futures, swaps and options. Gains or losses on these derivatives are included in Corporate services noninterest income.

The residential and commercial mortgage loan commitments associated with loans to be sold which are accounted for as derivatives are valued based on the estimated fair value of the underlying loan and the probability that the loan will fund within the terms of the commitment. The fair value also takes into account the fair value of the embedded servicing right.

We offer derivatives to our customers in connection with their risk management needs. These derivatives primarily consist of interest rate swaps, interest rate caps and floors, swaptions and foreign exchange contracts. We primarily manage our market risk exposure from customer transactions by entering into a variety of hedging transactions with third-party dealers. Gains and losses on customer-related derivatives are included in Other noninterest income.

Included in the customer, mortgage banking risk management, and other risk management portfolios are written interest-rate caps and floors entered into with customers and for risk management purposes. We receive an upfront premium from the counterparty and are obligated to make payments to the counterparty if the underlying market interest rate rises above or falls below a certain level designated in the contract. Our ultimate obligation under written options is based on future market conditions.

We have entered into risk participation agreements to share some of the credit exposure with other counterparties related to interest rate derivative contracts or to take on credit exposure to generate revenue. The following table presents the notional amount of risk participation agreements sold and maximum potential exposures at December 31, 2021 and 2020.

Table 95: Risk Participation Agreements

	Year ended December 31	
In billions	2021	2020
Risk participation agreements:		
Sold - notional amount	$ 8.0	$ 7.0
Maximum potential amount of exposure (a)	$ 0.3	$ 0.5

(a) Based on the fair value of the underlying swaps assuming all underlying third party customers referenced in the swap contracts defaulted.

Further detail regarding the gains (losses) on derivatives not designated in hedging relationships is presented in the following table:

Table 96: Gains (Losses) on Derivatives Not Designated for Hedging

In millions	Year ended December 31 2021	2020	2019
Derivatives used for mortgage banking activities:			
Interest rate contracts (a)	$ (78)	$ 792	$ 405
Derivatives used for customer-related activities:			
Interest rate contracts	149	210	125
Foreign exchange contracts and other	135	156	114
Gains (losses) from customer-related activities (b)	284	366	239
Derivatives used for other risk management activities:			
Foreign exchange contracts and other (b)	(30)	(338)	(137)
Total gains (losses) from derivatives not designated as hedging instruments	$ 176	$ 820	$ 507

(a) Included in Residential mortgage, Corporate services and Other noninterest income on our Consolidated Income Statement.
(b) Included in Other noninterest income on our Consolidated Income Statement.

Offsetting and Counterparty Credit Risk

We generally utilize a net presentation on the Consolidated Balance Sheet for those derivative financial instruments entered into with counterparties under legally enforceable master netting agreements. The master netting agreements reduce credit risk by permitting the closeout netting of all outstanding derivative instruments under the master netting agreement with the same counterparty upon the occurrence of an event of default. The master netting agreement also may require the exchange of cash or marketable securities to collateralize either party's net position. Collateral is typically exchanged daily on unsettled positions based on the net fair value of the positions with the counterparty as of the preceding day. Collateral representing initial margin, which is based on potential future exposure, may also be required to be exchanged. In certain cases, minimum thresholds must be exceeded before any collateral is exchanged. Any cash collateral exchanged with counterparties under these master netting agreements is also netted, when appropriate, against the applicable derivative fair values on the Consolidated Balance Sheet. However, the fair value of any securities held or pledged is not included in the net presentation on the balance sheet. In order for derivative instruments under a master netting agreement to be eligible for closeout netting under GAAP, we must conduct sufficient legal review to conclude with a well-founded basis that the offsetting rights included in the master netting agreement would be legally enforceable upon an event of default, including upon an event of bankruptcy, insolvency, or a similar proceeding of the counterparty. Enforceability is evidenced by a legal opinion that supports, with sufficient confidence, the enforceability of the master netting agreement in such circumstances.

Table 97 shows the impact legally enforceable master netting agreements had on our derivative assets and derivative liabilities as of December 31, 2021 and 2020. The table includes cash collateral held or pledged under legally enforceable master netting agreements. The table also includes the fair value of any securities collateral held or pledged under legally enforceable master netting agreements. Cash and securities collateral amounts are included in the table only to the extent of the related net derivative fair values.

Table 97 includes OTC derivatives and OTC derivatives cleared through a central clearing house. OTC derivatives represent contracts executed bilaterally with counterparties that are not settled through an organized exchange or directly cleared through a central clearing house. The majority of OTC derivatives are governed by the ISDA documentation or other legally enforceable master netting agreements. OTC cleared derivatives represent contracts executed bilaterally with counterparties in the OTC market that are novated to a central clearing house who then becomes our counterparty. OTC cleared derivative instruments are typically settled in cash each day based on the prior day value.

Table 97: Derivative Assets and Liabilities Offsetting

In millions	Gross Fair Value	Amounts Offset on the Consolidated Balance Sheet: Fair Value Offset Amount	Amounts Offset on the Consolidated Balance Sheet: Cash Collateral	Net Fair Value	Securities Collateral Held /Pledged Under Master Netting Agreements	Net Amounts
December 31, 2021						
Derivative assets						
Interest rate contracts:						
Over-the-counter cleared	$ 20			$ 20		$ 20
Over-the-counter	3,561	$ 533	$ 593	2,435	$ 300	2,135
Commodity contracts	1,363	299	1	1,063		1,063
Foreign exchange and other contracts	208	96	10	102		102
Total derivative assets	$ 5,152	$ 928	$ 604	$ 3,620 (a)	$ 300	$ 3,320
Derivative liabilities						
Interest rate contracts:						
Over-the-counter cleared	$ 12			$ 12		$ 12
Over-the-counter	1,643	$ 569	$ 776	298		298
Commodity contracts	1,373	291	784	298		298
Foreign exchange and other contracts	542	68	97	377		377
Total derivative liabilities	$ 3,570	$ 928	$ 1,657	$ 985 (b)		$ 985
December 31, 2020						
Derivative assets						
Interest rate contracts:						
Over-the-counter cleared	$ 48			$ 48		$ 48
Over-the-counter	5,803	$ 430	$ 1,426	3,947	$ 531	3,416
Commodity contracts	411	209	4	198		198
Foreign exchange and other contracts	271	81	4	186	1	185
Total derivative assets	$ 6,533	$ 720	$ 1,434	$ 4,379 (a)	$ 532	$ 3,847
Derivative liabilities						
Interest rate contracts:						
Over-the-counter cleared	$ 42			$ 42		$ 42
Over-the-counter	1,740	$ 462	$ 1,179	99		99
Commodity contracts	384	182	103	99		99
Foreign exchange and other contracts	590	76	170	344		344
Total derivative liabilities	$ 2,756	$ 720	$ 1,452	$ 584 (b)		$ 584

(a) Represents the net amount of derivative assets included in Other assets on our Consolidated Balance Sheet.
(b) Represents the net amount of derivative liabilities included in Other liabilities on our Consolidated Balance Sheet.

In addition to using master netting agreements and other collateral agreements to reduce credit risk associated with derivative instruments, we also seek to manage credit risk by evaluating credit ratings of counterparties and by using internal credit analysis, limits, and monitoring procedures.

At December 31, 2021, cash and debt securities (primarily agency mortgage-backed securities) totaling $1.4 billion were pledged to us under master netting agreements and other collateral agreements to collateralize net derivative assets due from counterparties and to meet initial margin requirements, and we pledged cash and debt securities (primarily agency mortgage-backed securities) totaling $2.5 billion under these agreements to collateralize net derivative liabilities owed to counterparties and to meet initial margin requirements. These totals may differ from the amounts presented in the preceding offsetting table because these totals may include collateral exchanged under an agreement that does not qualify as a master netting agreement or because the total amount of collateral pledged exceeds the net derivative fair values with the counterparty as of the balance sheet date due to timing or other factors, such as initial margin. To the extent not netted against the derivative fair values under a master netting agreement, the receivable for cash pledged is included in Other assets and the obligation for cash held is included in Other liabilities on our Consolidated Balance Sheet. Securities pledged to us by counterparties are not recognized on our balance sheet. Likewise, securities we have pledged to counterparties remain on our balance sheet.

Credit-Risk Contingent Features

Certain derivative agreements contain various credit-risk-related contingent provisions, such as those that require our debt to maintain a specified credit rating from one or more of the major credit rating agencies. If our debt ratings were to fall below such specified ratings, the counterparties to the derivative instruments could request immediate payment or demand immediate and ongoing full collateralization on derivative instruments in net liability positions. The following table presents the aggregate fair value of derivative