UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to
Commission file number 001-09718

THE PNC FINANCIAL SERVICES GROUP, INC.

(Exact name of registrant as specified in its charter)

Pennsylvania	**25-1435979**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

The Tower at PNC Plaza, 300 Fifth Avenue, Pittsburgh, Pennsylvania 15222-2401
(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code - **(888) 762-2265**

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock, par value $5.00	PNC	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:
$1.80 Cumulative Convertible Preferred Stock - Series B, par value $1.00

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

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

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

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

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

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

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

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

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

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

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

The aggregate market value of the registrant's outstanding voting common stock held by nonaffiliates on June 30, 2022, determined using the per share closing price on that date on the New York Stock Exchange of $157.77, was approximately $64.6 billion. There is no non-voting common equity of the registrant outstanding.

Number of shares of registrant's common stock outstanding at February 3, 2023: 399,682,159

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement of The PNC Financial Services Group, Inc. to be filed pursuant to Regulation 14A for the 2023 annual meeting of shareholders (Proxy Statement) are incorporated by reference into Part III of this Form 10-K.

THE PNC FINANCIAL SERVICES GROUP, INC.
Cross-Reference Index to 2022 Form 10-K

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

Cross-Reference Index to 2022 Form 10-K (continued)

MD&A TABLE REFERENCE

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS TABLE REFERENCE

Cross-Reference Index to 2022 Form 10-K (continued)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS TABLE REFERENCE (Continued)

PART I

Forward-Looking Statements: From time to time, The PNC Financial Services Group, Inc. has made and may continue to make written or oral forward-looking statements regarding our outlook for financial performance, such as earnings, revenues, expenses, tax rates, capital and liquidity levels and ratios, asset levels, asset quality, financial position and other matters regarding or affecting us and our future business and operations or the impact of legal, regulatory or supervisory matters on our business operations or performance, including our sustainability strategy. This Annual Report on Form 10-K (the Report or Form 10-K) also includes forward-looking statements. With respect to all such forward-looking statements, you should review our Risk Factors discussion in Item 1A, our Risk Management, Critical Accounting Estimates and Judgments, and Cautionary Statement Regarding Forward-Looking Information sections included in Item 7, and Note 21 Legal Proceedings. In this Report, "PNC," "we," "us," "the Company" or "the Corporation" refers to The PNC Financial Services Group, Inc. and its subsidiaries on a consolidated basis (except when referring to PNC as a public company, its common stock or other securities issued by PNC, which just refer to The PNC Financial Services Group, Inc.). References to The PNC Financial Services Group, Inc. or to any of its subsidiaries are specifically made where applicable.

See page 194 for a glossary of certain terms and acronyms used in this Report.

ITEM 1 – BUSINESS

Business Overview

Headquartered in Pittsburgh, Pennsylvania, we are one of the largest diversified financial institutions in the U.S. We have businesses engaged in retail banking, including residential mortgage, corporate and institutional banking and asset management, providing many of our products and services nationally. Our retail branch network is located coast-to-coast. We also have strategic international offices in Canada, China, Germany and the United Kingdom. At December 31, 2022, our consolidated total assets, total deposits and total shareholders' equity were $557.3 billion, $436.3 billion and $45.8 billion, respectively.

We were incorporated under the laws of the Commonwealth of Pennsylvania in 1983 with the consolidation of Pittsburgh National Corporation and Provident National Corporation. Since 1983, we have diversified our geographical presence, business mix and product capabilities through organic growth, strategic bank and non-bank acquisitions and equity investments, and the formation of various non-banking subsidiaries.

Acquisition of BBVA USA Bancshares, Inc.

On June 1, 2021, PNC acquired BBVA USA Bancshares, Inc. (BBVA), a U.S. financial holding company conducting its business operations primarily through its U.S. banking subsidiary, BBVA USA. PNC paid $11.5 billion in cash as consideration for the acquisition.

On October 8, 2021, BBVA USA merged into PNC Bank. On October 12, 2021, PNC converted approximately 2.6 million customers, 9,000 employees and over 600 branches across seven states. Our results of operations and balance sheets for all periods presented in this Report reflect the benefit of BBVA's acquired businesses for the period since the acquisition closed on June 1, 2021.

For additional information on the acquisition of BBVA, see Note 2 Acquisition and Divestiture Activity.

Discontinued Operations

In the second quarter of 2020, PNC divested its entire 22.4% equity investment in BlackRock. Net proceeds from the sale were $14.2 billion with an after-tax gain on sale of $4.3 billion. BlackRock's historical results are reported as discontinued operations. For additional details on the divestiture of our equity investment in BlackRock, see Note 2 Acquisition and Divestiture Activity.

Subsidiaries

Our corporate legal structure at December 31, 2022 consisted of one domestic subsidiary bank, including its subsidiaries, and 59 active non-bank subsidiaries, in addition to various affordable housing investments and historic rehabilitation investments. Our bank subsidiary is PNC Bank, a national bank chartered in Wilmington, Delaware. For additional information on certain of our subsidiaries, see Exhibit 21 to this Report.

Statistical Disclosure By Bank Holding Companies

The following statistical information is included on the indicated pages of this Report and is incorporated herein by reference:

	Form 10-K page
Average Consolidated Balance Sheet And Net Interest Analysis	190
Analysis Of Year-To-Year Changes In Net Interest Income	191
Maturities And Weighted-Average Yield Of Securities	117
Selected Loan Maturities And Interest Sensitivity	192
Credit Ratios	65, 69 and 70
Allocation Of Allowance For Credit Losses	69
Average Amount And Average Rate Paid On Deposits	190
Uninsured Deposits and Time Deposits	193

Supervision and Regulation

The PNC Financial Services Group, Inc. is a BHC registered under the BHC Act and a financial holding company under the GLB Act. More than 99% of the assets of PNC are held in its domestic bank subsidiary, PNC Bank, a national banking association chartered and located in Wilmington, Delaware.

We are subject to numerous governmental regulations, some of which are highlighted below. See Note 20 Regulatory Matters for additional information regarding our regulatory matters. Applicable laws and regulations restrict our permissible activities and investments, impose conditions and requirements on the products and services we offer and the manner in which they are offered and sold, and require compliance with protections for loan, deposit, brokerage, fiduciary, investment management and other customers, among other things. They also restrict our ability to repurchase stock or pay dividends, or to receive dividends from our bank subsidiary, and impose capital adequacy and liquidity requirements. The consequences of noncompliance with these, or other applicable laws or regulations, can include substantial monetary and nonmonetary sanctions. See the additional information included as Risk Factors in Item 1A of this Report discussing the impact of financial regulatory initiatives on the regulatory environment for us and the financial services industry.

In addition, we are subject to comprehensive supervision and examination by, among other regulatory bodies, the Federal Reserve and the OCC. These examinations consider not only compliance with applicable laws, regulations and supervisory policies of the agency, but also capital levels, asset quality, risk management effectiveness, the ability and performance of management and the board of directors, the effectiveness of internal controls and internal audit function, earnings, liquidity and various other factors.

The results of examination activity by any of our federal bank regulators potentially can result in the imposition of significant limitations on our activities and growth. These regulatory agencies generally have broad discretion to impose restrictions and limitations on the operations of a regulated entity and take enforcement action, including the imposition of substantial monetary penalties and nonmonetary requirements, against a regulated entity where the relevant agency determines, among other things, that the operations of the regulated entity or any of its subsidiaries fail to comply with applicable law or regulations, are conducted in an unsafe or unsound manner, or represent an unfair or deceptive act or practice. This supervisory framework, including the examination reports and supervisory ratings (which are not publicly available) of the agencies, could materially impact the conduct, growth and profitability of our operations.

The CFPB is responsible for examining us for compliance with most federal consumer financial protection laws, including the laws relating to fair lending and prohibiting unfair, deceptive or abusive acts or practices in connection with the offer, sale or provision of consumer financial products or services, and for enforcing such laws with respect to PNC Bank and its affiliates. The results of the CFPB's examinations (which are not publicly available) also can result in restrictions or limitations on the operations of a regulated entity as well as enforcement actions against a regulated entity, including the imposition of substantial monetary penalties and nonmonetary requirements.

We also are subject to regulation by the SEC by virtue of our status as a public company and by the SEC and the CFTC due to the nature of some of our businesses. Our businesses with operations outside the U.S. also are subject to regulation by appropriate authorities in the foreign jurisdictions in which they do business.

As a regulated financial services firm, our relationships and good standing with regulators are of fundamental importance to the operation and growth of our businesses. The Federal Reserve, OCC, CFPB, SEC, CFTC and other domestic and foreign regulators have broad enforcement powers, and certain of the regulators have the power to approve, deny, or refuse to act upon our applications or notices to conduct new activities, acquire or divest businesses, assets or deposits, expand our operations geographically or reconfigure existing operations.

Among the areas that have been receiving a high level of regulatory focus are compliance with the BSA and anti-money laundering laws, capital and liquidity management (including stress testing), the structure and effectiveness of enterprise risk management frameworks, the protection of confidential customer information, cybersecurity, the oversight of arrangements with third-party vendors and suppliers, and compliance with fair lending and other consumer protection laws and regulations, including those governing retail sales practices, fee disclosures, unfair, deceptive or abusive acts or practices, collection practices, protections for military service members and individuals in bankruptcy, and the management of risks associated with the Paycheck Protection Program we participated in to help businesses mitigate the impact of the COVID-19 pandemic.

The profitability of our businesses also is affected by rules and regulations that impact the business and financial sectors in general, including laws governing taxation, antitrust regulation, electronic commerce, data security and privacy.

There are numerous rules governing the regulation of financial services institutions and their holding companies. Accordingly, the following discussion is general in nature and does not purport to be complete or to describe all of the laws, regulations and policies that apply to us. To a substantial extent, the purpose of the regulation and supervision of financial services institutions and their holding companies is not to protect our shareholders and our non-customer creditors, but rather to protect our customers (including depositors), the financial markets and financial system in general.

Banking Regulation and Supervision

Regulatory Capital Requirements, Stress Testing and Capital Planning. PNC and PNC Bank are subject to the regulatory capital requirements established by the Federal Reserve and the OCC, respectively. The foundation of the agencies' regulatory capital rules is the international regulatory capital framework developed by the Basel Committee, the international body responsible for developing global regulatory standards for banking organizations for consideration and adoption by national jurisdictions. The regulatory capital rules establish minimum requirements for the ratio of a banking organization's regulatory capital to its risk-weighted assets, referred to as risk-based capital requirements, as well as for the ratio of its regulatory capital to measures of assets and other exposures, referred to as leverage capital requirements. The agencies' regulatory capital rules have undergone significant change since 2013, when the agencies adopted final rules to implement the Basel Committee's international regulatory capital framework, known as "Basel III", as well as certain provisions of Dodd-Frank. In September 2022, the federal banking agencies announced their intent to revise U.S. regulatory capital requirements to align them with the international standards finalized by the Basel Committee in December 2017, which include, among other items, changes to the standardized approach for credit risk, the credit valuation adjustment risk framework, operational risk framework and the leverage ratio framework. These changes could increase capital requirements for U.S. banking organizations, including PNC.

The federal banking agencies tailor the application of their capital, liquidity and enhanced prudential requirements for banking organizations to the asset size and risk profile (as measured by certain regulatory metrics) of the banking organization. The agencies' capital and liquidity rules classify all BHCs with $100 billion or more in total assets into one of four categories (Category I, Category II, Category III and Category IV), with the most stringent capital and liquidity requirements applying to Category I firms and the least restrictive requirements applying to Category IV firms. The classification of any bank subsidiary of a BHC generally follows that of its parent BHC. PNC and PNC Bank currently are Category III firms because PNC (i) has more than $250 billion, but less than $700 billion, in consolidated total assets, (ii) is not designated as a GSIB, and (iii) has less than $75 billion in cross-jurisdictional activity. PNC and PNC Bank would become a Category I or II institution, and subject to more stringent capital and liquidity standards, if PNC were at some point in the future to have $700 billion or more in total consolidated assets, be designated as a GSIB, or have $75 billion or more in cross-jurisdictional activity. As of December 31, 2022, PNC had cross-jurisdictional activities for these purposes of $24.1 billion.

The regulatory capital rules generally divide regulatory capital into three components: CET1 capital, additional Tier 1 capital (which, together with CET1 capital, comprises Tier 1 capital) and Tier 2 capital. CET1 capital is generally common stock, retained earnings, and qualifying minority interests less required deductions. As permitted, PNC and PNC Bank have elected to exclude AOCI related to both available for sale securities and pension and other post-retirement plans from CET1 capital. Additional Tier 1 capital generally includes, among other things, perpetual preferred stock and qualifying minority interests, less required deductions. Tier 2 capital generally comprises qualifying subordinated debt and, subject to certain quantitative limits, ACL, less any required deductions from Tier 2 capital. The regulatory capital rules limit the extent to which minority interests in consolidated subsidiaries may be included in regulatory capital. Total capital is the sum of Tier 1 capital and Tier 2 capital.

Under the regulatory capital rules, PNC and PNC Bank must deduct investments in unconsolidated financial institutions, MSRs and deferred tax assets (in each case, net of associated deferred tax liabilities) from CET1 capital to the extent such categories individually exceed 25% of the institution's adjusted CET1 capital. As of December 31, 2022, PNC and PNC Bank's investments in unconsolidated financial institutions, MSRs and deferred tax assets did not exceed this threshold.

The agencies' capital rules also permit banking organizations to elect to phase-in, on a straight-line basis over a three-year period, the day-one regulatory capital effects of implementing the Financial Accounting Standards Board's ASU 2016-13 - *Financial Instruments*

- *Credit Losses* (Topic 326), commonly referred to as the CECL standard. PNC implemented the CECL standard effective January 1, 2020, but elected not to implement the phase-in of the day-one regulatory capital effects of the standard. Separately, the rules permit banking organizations that were subject to CECL during 2020 to delay CECL's estimated impact on CET1 capital. CECL's estimated impact on CET1 capital is the change in retained earnings at adoption plus or minus 25% of the change in CECL ACL at the balance sheet date compared to CECL ACL at transition. For institutions electing to utilize this CECL transition rule for regulatory capital, the estimated CECL impact was added to CET1 through December 31, 2021, and will be phased-out over the following three years. PNC and PNC Bank elected this five-year transition period effective March 31, 2020, which impacts the regulatory capital ratios disclosed in this Report. See Note 1 Accounting Policies for more detail on CECL and the ACL.

PNC and PNC Bank are required to use the standardized approach for determining risk-weighted assets for purposes of calculating the risk-based capital ratios. The standardized approach for risk-weighted assets takes into account credit and market risk. To calculate risk-weighted assets under the standardized approach for credit risk, the nominal dollar amounts of assets and credit equivalent amounts of off-balance sheet items are generally multiplied by risk weights set forth in the rules, with the risk weights increasing as the perceived credit risk of the relevant asset or exposure increases. For certain types of exposures, such as securitization exposures, the standardized approach establishes one or more methodologies that are to be used to calculate the risk-weighted asset amount for the exposure. High volatility commercial real estate, past due, and equity exposures, as well as MSRs and deferred tax assets that are not deducted from capital, are generally subject to higher risk weights than other types of exposures. Under the market risk capital rule, risk-weighted asset amounts for covered trading positions are determined based on the calculation of VaR (including stressed VaR), specific risk, incremental risk and comprehensive risk amounts, as specified in the capital rules.

We refer to the capital ratios calculated using the definition of capital under the agencies' Basel III capital rules and, for the risk-based ratios, standardized risk-weighted assets, as our Basel III regulatory capital ratios.

The risk-based capital rules establish certain minimum standards for the capital ratios of banking organizations, including PNC and PNC Bank. Banking organizations must maintain a minimum CET1 ratio of 4.5%, a Tier 1 capital ratio of 6.0%, and a Total capital ratio of 8.0%, in each case in relation to risk-weighted assets, to be considered "adequately capitalized." In 2020, the Federal Reserve introduced a CET1 SCB for BHCs subject to the Federal Reserve's CCAR process, such as PNC. The SCB is calculated based on the difference between a firm's starting and minimum CET1 ratio (as projected by the Federal Reserve) in the supervisory severely adverse scenario during the CCAR process, plus four quarters of the organization's planned common stock dividends (expressed as a percentage of risk-weighted assets), subject to a floor of 2.5%. Based on PNC's performance under the Federal Reserve's supervisory stress tests as part of CCAR 2022, PNC's SCB for the period from the fourth quarter of 2022 through the third quarter of 2023 was set at 2.9%. While PNC Bank is not subject to a SCB, PNC Bank is required to maintain a capital conservation buffer in the form of CET1 equal to a fixed 2.5% of risk-weighted assets.

PNC and PNC Bank must maintain risk-based capital above the minimum risk-based capital ratio requirements plus its SCB (in the case of PNC) or capital conservation buffer (in the case of PNC Bank) in order to avoid limitations on capital distributions, including dividends and repurchases of any Tier 1 capital instrument, such as common and qualifying preferred stock, and certain discretionary incentive compensation payments. As a result, to avoid limitations on capital distributions and certain discretionary incentive compensation payments, PNC must maintain a CET1 capital ratio of at least 7.4%, a Tier 1 capital ratio of at least 8.9%, and a Total capital ratio of at least 10.9%, and PNC Bank must maintain a CET1 capital ratio of at least 7.0%, a Tier 1 capital ratio of at least 8.5%, and a Total capital ratio of at least 10.5%. In addition, while a firm's SCB is typically determined as part of the Federal Reserve's annual CCAR process, the Federal Reserve has the right to conduct supervisory stress tests, require a firm to submit a revised capital plan and calculate a firm's SCB more frequently. BHCs subject to a SCB, such as PNC, generally may increase their capital distributions without seeking prior Federal Reserve approval, provided the BHC otherwise complies with its SCB and any other applicable capital or capital distribution requirements.

For Category III banking organizations (such as PNC and PNC Bank), the Federal Reserve and OCC can supplement these higher SCB or capital conservation buffer levels above the regulatory minimums by a countercyclical capital buffer of up to an additional 2.5% of risk-weighted assets. This buffer, which must be held in the form of CET1 capital, is currently set at zero in the U.S. A Federal Reserve policy statement establishes the framework and factors the Federal Reserve would use in setting and adjusting the amount of the U.S. countercyclical capital buffer. Covered banking organizations would generally have 12 months after the announcement of any increase in the countercyclical capital buffer to meet the increased buffer requirement, unless the Federal Reserve establishes an earlier effective date.

The regulatory capital rules also require that banking organizations maintain a minimum amount of Tier 1 capital as compared to average consolidated assets, referred to as the leverage ratio, and require Category III banking organizations to maintain a minimum amount of Tier 1 capital as compared to total leverage exposure, referred to as the supplementary leverage ratio. Total leverage exposure takes into account on-balance sheet assets as well as certain off-balance sheet items, including loan commitments and potential future exposure under derivative contracts. Banking organizations are required to maintain a minimum leverage ratio of Tier 1 capital to total assets of 4.0%, and Category III banking organizations must maintain a minimum supplementary leverage ratio of

3.0%. As of December 31, 2022, the leverage and supplementary leverage ratios of PNC and PNC Bank were above the required minimum level.

PNC and PNC Bank are not subject to the additional CET1 capital surcharge, minimum long-term debt requirement, minimum total loss-absorbing capacity or enhanced supplementary leverage ratio requirements that apply to U.S. GSIBs. However, it is possible that the agencies will consider applying one or more of these requirements in the future to additional BHCs or insured depository institutions like PNC and PNC Bank. In October 2022, the Federal Reserve and FDIC jointly issued an advance notice of proposed rulemaking to solicit input on potential changes to the resolution-related requirements applicable to large banking organizations like PNC that are not GSIBs, including a requirement to maintain loss-absorbing capacity at the bank or holding company in the form of long-term debt.

Failure to meet applicable capital requirements could subject a banking organization to a variety of enforcement remedies available to the federal banking agencies, including a limitation on the ability to pay dividends or repurchase shares, the issuance of a capital directive to increase capital and, in severe cases, the termination of deposit insurance by the FDIC and the appointment of a conservator or receiver. In some cases, the extent of these powers depends upon whether the institution in question is considered "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" or "critically undercapitalized." The thresholds at which an insured depository institution is considered "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" or "critically undercapitalized" are based on (i) the institution's CET1, Tier 1 and total risk-based capital ratios; (ii) the institution's leverage ratio; and (iii) for the definitions of "adequately capitalized" and "undercapitalized", the institution's supplementary leverage ratio (if applicable). Generally, the smaller an institution's capital base in relation to its risk-weighted or total assets, the greater the scope and severity of the agencies' powers. Business activities may also be affected by an institution's capital classification. For example, PNC and PNC Bank must remain "well capitalized" for PNC to continue to take advantage of financial holding company status.

At December 31, 2022, PNC and PNC Bank exceeded the required ratios for classification as "well capitalized." For additional discussion of capital adequacy requirements, including the levels of capital required to be considered "well capitalized," see the Liquidity and Capital Management portion of the Risk Management section of this Report and Note 20 Regulatory Matters.

In addition to regulatory capital requirements, we are subject to the Federal Reserve's capital plan rule, capital stress testing requirements and CCAR process, as well as the DFAST requirements of the Federal Reserve and the OCC.

As part of the CCAR process, the Federal Reserve undertakes a supervisory assessment of the capital planning process of BHCs, including PNC, that have $100 billion or more in total consolidated assets. For us, this capital planning assessment is based on a review of a comprehensive capital plan submitted to the Federal Reserve that describes the company's planned capital actions, such as plans to pay or increase common stock dividends, engage in common stock repurchase programs, or issue or redeem preferred stock or other regulatory capital instruments during a nine quarter review period, as well as the results of stress tests conducted by both the company and the Federal Reserve under different hypothetical macroeconomic scenarios, including a supervisory severely adverse scenario provided by the Federal Reserve. The Federal Reserve's capital plan rule provides that a BHC must resubmit a new capital plan prior to the next annual submission date if, among other things, there has been or will be a material change in the BHC's risk profile, financial condition or corporate structure since its last capital plan submission.

In evaluating PNC's capital plan, the Federal Reserve also considers a number of qualitative factors. In assessing a BHC's capital planning and stress testing processes, the Federal Reserve considers whether the BHC has sound and effective governance to oversee these processes. The Federal Reserve's evaluation focuses on whether a BHC's capital planning and stress testing processes are supported by a strong risk management framework to identify, measure and assess material risks and that provides a strong foundation to capital planning. The Federal Reserve also considers the comprehensiveness of a BHC's control framework and evaluates a BHC's policy guidelines for capital planning and assessing capital adequacy. A BHC's stress testing scenario design processes and approaches for estimating the impact of stress on its capital position, including stress testing models and non-model qualitative approaches, may be reviewed to ensure that projections reflect the impact of appropriately stressful conditions, as well as risks idiosyncratic to the BHC, on its capital position. Significant deficiencies in a BHC's capital planning and stress testing processes may result in supervisory directives that require the firm to address the identified deficiencies and, potentially, a downgrade in the BHC's supervisory capital positions and planning rating.

In connection with the 2023 CCAR exercise, we must file our capital plan and stress testing results using financial data as of December 31, 2022, with the Federal Reserve by April 5, 2023. In June 2023, we expect to receive PNC's preliminary SCB for the period from the fourth quarter of 2023 through the third quarter of 2024. The Federal Reserve must provide firms their final SCB for this period by August 31, 2023, which would reflect any changes made to the firm's planned common stock dividends to remain in compliance with the firm's SCB.

As a Category III institution, PNC must conduct a company-run DFAST stress test biennially in even numbered years and release PNC's projections of certain revenue, loss and capital results from the exercise under the agencies' hypothetical supervisory severely adverse macroeconomic scenario and applying the agencies' DFAST capital action assumptions.

As part of the DFAST and annual CCAR processes, the Federal Reserve releases certain revenue, loss and capital results for each participating firm from its supervisory stress testing exercises.

<u>*Regulatory Liquidity Standards and Liquidity Risk Management Requirements*</u>. The Basel Committee's Basel III framework also includes short-term liquidity standards and long-term funding standards, such as LCR and NSFR, respectively.

The U.S. banking agencies' LCR rules are designed to ensure that covered banking organizations maintain an adequate level of cash and high-quality liquid assets to meet estimated net liquidity needs in a short-term stress scenario using liquidity inflow and outflow assumptions prescribed in the rules (net cash outflow). A company's LCR is the amount of its high-quality liquid assets divided by its net cash outflows, expressed as a percentage, and as calculated under the rules. The regulatory minimum LCR that covered banking organizations are required to maintain is 100%. PNC and PNC Bank are required to calculate the LCR on a daily basis. If either institution's LCR is below the minimum requirement for three consecutive business days, the institution must promptly provide its regulator with a plan for achieving compliance with the minimum LCR requirement.

The NSFR is designed to measure the stability of the maturity structure of assets and liabilities of banking organizations over a one-year time horizon. A covered BHC's NSFR is the ratio of its available stable funding to its required stable funding amount (as calculated under the rules) over a one-year horizon. The regulatory minimum ratio for all covered banking organizations (expressed as a percentage) is 100%. PNC and PNC Bank are required to calculate the NSFR on an ongoing basis. If either institution's NSFR falls, or is likely to fall below, the minimum requirement, the institution must provide its regulator with a plan for achieving compliance with the minimum NSFR requirement.

As Category III institutions with less than $75 billion in weighted short-term wholesale funding, PNC and PNC Bank are subject to reduced LCR and NSFR requirements, with each company's LCR net outflows and NSFR required stable funding (as calculated under the rules) reduced by 15%, thereby reducing the amount of high-quality liquid assets or available stable funding each institution must hold to meet the LCR and NSFR minimum requirements, respectively. As of December 31, 2022, PNC had weighted short-term wholesale funding for these purposes of $33.7 billion.

The Federal Reserve requires large BHCs, including PNC, to publicly disclose certain quantitative and qualitative measures of their LCR- and NSFR-related liquidity profile. These disclosures include major components used to calculate the LCR and NSFR (*e.g.*, high-quality liquid assets, cash outflows and inflows for the LCR, and available stable funding and required stable funding for the NSFR, at the consolidated parent company), and a qualitative discussion of the BHC's LCR and NSFR results, including, among other things, key drivers of the results, composition of high-quality liquid assets and available stable funding, and concentration of funding sources.

Additionally, as a Category III institution, PNC also must, among other things, conduct internal liquidity stress tests over a range of time horizons, maintain a buffer of highly liquid assets sufficient to meet projected net outflows under the BHC's 30-day liquidity stress test and maintain a contingency funding plan that meets certain requirements.

For additional discussion of regulatory liquidity requirements, refer to the Liquidity and Capital Management portion of the Risk Management section of this Report.

<u>*Source of Parent Company Liquidity and Dividends*</u>. The principal source of our liquidity at the parent company level is dividends from PNC Bank. PNC Bank is subject to various restrictions on its ability to pay dividends to PNC Bancorp, Inc., its direct parent, which is a wholly-owned direct subsidiary of The PNC Financial Services Group, Inc. PNC Bank also is subject to federal laws limiting extensions of credit to its parent holding company and non-bank affiliates as discussed in Note 20 Regulatory Matters. Further information on bank level liquidity and parent company liquidity is also available in the Liquidity and Capital Management portion of the Risk Management section of this Report.

Federal Reserve rules provide that a BHC is expected to serve as a source of financial strength to its subsidiary banks and to commit resources to support such banks if necessary. Dodd-Frank requires that the Federal Reserve jointly adopt new rules with the OCC and the FDIC to implement this source of strength requirement. These joint rules have not yet been proposed. Consistent with this source of strength policy for subsidiary banks, the Federal Reserve has stated that, as a matter of prudent banking, a BHC generally should not maintain a rate of cash dividends unless its net income available to common shareholders has been sufficient to fully fund the dividends and the prospective rate of earnings retention appears to be consistent with the corporation's capital needs, asset quality and overall financial condition. Further, in providing guidance to the large BHCs participating in the CCAR exercise, such as PNC as discussed above, the Federal Reserve has expected capital plans to reflect conservative dividend payout ratios.

Enhanced Prudential Requirements. Under Federal Reserve rules, PNC and other BHCs with total consolidated assets of $100 billion or more are subject to various enhanced prudential standards related to liquidity risk management and overall risk management. For PNC, these rules, among other things, establish liquidity stress testing requirements (discussed above), limitations on PNC's aggregate net credit exposures to any single, unaffiliated company (referred to as SCCL), and certain oversight and governance responsibilities for PNC's Chief Risk Officer, the Board of Directors, and the Risk Committee of the Board of Directors. Under the Federal Reserve's SCCL rules, PNC's aggregate net credit exposure (including exposure resulting from, among other transactions, extensions of credit, repurchase and reverse repurchase transactions, investments in securities and derivative transactions) to any unaffiliated counterparty may not exceed 25% of PNC's Tier 1 capital.

The Federal Reserve may continue to develop the set of enhanced prudential standards that apply to large BHCs in order to further promote the resiliency of such firms and the U.S. financial system. For additional information, see Item 1A Risk Factors of this Report.

Additional Powers Under the GLB Act. The GLB Act permits a qualifying BHC, such as PNC, to become a "financial holding company" and thereby engage in, or affiliate with companies engaging in, a broader range of financial activities than would otherwise be permitted for a BHC. Permitted affiliates include securities underwriters and dealers, insurance companies, insurance agents and companies engaged in other activities that are determined by the Federal Reserve, in consultation with the Secretary of the Treasury, to be "financial in nature or incidental thereto" or are determined by the Federal Reserve unilaterally to be "complementary" to financial activities. We became a financial holding company in 2000. A BHC qualifies to become a financial holding company if the BHC and its subsidiary depository institutions are "well capitalized" and "well managed" and its subsidiary depository institutions have a rating under the CRA of Satisfactory or better. Among other activities, we currently rely on our status as a financial holding company to conduct merchant banking activities and securities underwriting and dealing activities. As subsidiaries of a financial holding company under the GLB Act, our non-bank subsidiaries are generally allowed to conduct new financial activities, and we generally are permitted to acquire non-bank financial companies that have less than $10 billion in assets, with after-the-fact notice to the Federal Reserve.

In addition, the GLB Act permits qualifying national banks to engage in expanded activities through a "financial subsidiary." PNC Bank has filed a financial subsidiary certification with the OCC and currently engages in insurance agency activities through financial subsidiaries. PNC Bank may also generally engage through a financial subsidiary in any activity that is determined to be financial in nature or incidental to a financial activity by the Secretary of the Treasury, in consultation with the Federal Reserve (other than insurance underwriting activities, insurance company investment activities and merchant banking). In order to establish a financial subsidiary, a national bank and each of its depository institution affiliates must be "well capitalized" and "well managed" and the national bank and each of its depository institution affiliates must have a CRA rating of Satisfactory or better.

If a financial holding company or a national bank with a financial subsidiary fails to continue to meet the applicable "well capitalized" or "well managed" criteria, the financial holding company or national bank must enter into an agreement with the Federal Reserve or the OCC, respectively, that, among other things, identifies how the capital or management deficiencies will be corrected. Until such deficiencies are corrected, the relevant agency may impose limits or conditions on the activities of the company or bank, and the company or bank may not engage in, or acquire a company engaged in, the types of expanded activities only permissible for a financial holding company or financial subsidiary without prior approval of the relevant agency.

In addition, a financial holding company generally may not engage in a new financial activity authorized by the GLB Act, or acquire a company engaged in such a new activity, if any of its insured depository institutions receives a CRA rating of less than Satisfactory. A national bank's financial subsidiary generally may not engage in a new financial activity authorized by the GLB Act, or acquire a company engaged in such a new financial activity, if the national bank or any of its insured depository institution affiliates received a CRA rating of less than Satisfactory. At December 31, 2022, PNC Bank had a rating of Outstanding with respect to CRA. In May 2022, the federal banking agencies issued a notice of proposed rulemaking to amend the regulations implementing the CRA. The proposal, among other things, would significantly expand the number of areas in which a bank is evaluated under the CRA, change the tests used to evaluate a bank in those areas, and expand the data a bank must collect and report. We expect the federal banking agencies to finalize revisions to the regulations implementing the CRA in 2023, which may increase PNC Bank's obligations and compliance costs necessary to achieve a "Satisfactory" or "Outstanding" rating.

Volcker Rule. The Volcker Rule and its implementing regulations prohibit banking entities from engaging in short-term trading as principal and having certain ownership interests in and relationships with hedge funds, private equity funds, and certain other private funds (together, "covered funds"), unless an exemption or exception applies. For example, the exemptions under the Volcker Rule allow banking entities to trade as principal for securities underwriting, market making and risk-mitigating hedging purposes, subject to a variety of conditions. PNC and PNC Bank are subject to simplified and tailored compliance program requirements because each entity has trading assets and liabilities of less than $20 billion.

Other Federal Reserve and OCC Regulation and Supervision. The federal banking agencies possess broad powers to take corrective action as deemed appropriate based on the actions, operations or risk management programs of a BHC, an insured depository institution or their subsidiaries, and the Federal Reserve and the OCC have the ability to take enforcement action against PNC and PNC Bank, respectively, to prevent and remedy acts and practices that the agency determines to be unfair or deceptive. A finding that we have engaged in a deceptive act or practice may have collateral consequences on our ability to rely on certain exemptions in, or take advantage of certain provisions of, the securities laws absent a government waiver of such restrictions.

Moreover, less than satisfactory examination ratings, lower capital or liquidity ratios than peer group institutions, or regulatory concerns regarding management, controls, assets, operations or other factors can all potentially result in practical limitations on the ability of a bank or BHC to engage in new activities, grow, acquire new businesses, repurchase its stock or pay dividends or continue to conduct existing activities. Furthermore, the OCC has established certain heightened risk management and governance standards for large banks, including PNC Bank. The guidelines, among other things, establish minimum standards for the design and implementation of a risk governance framework, describe the appropriate risk management roles and responsibilities of front line units, independent risk management, internal audit, and the board of directors, and provide that a covered bank should have a comprehensive written statement that articulates its risk appetite and serves as a basis for the framework. If the OCC determines that a covered national bank is not in compliance with these or other enforceable guidelines (including guidelines relating to information security standards), the OCC may require the bank to submit a corrective action plan and may initiate enforcement action against the bank if an acceptable plan is not submitted or the bank fails to comply with an approved plan.

Sections 23A and 23B of the Federal Reserve Act and the Federal Reserve's implementing regulation, Regulation W, place quantitative and qualitative restrictions on covered transactions between a bank and its affiliates (for example between PNC Bank, on the one hand, and The PNC Financial Services Group, Inc. and its non-bank subsidiaries, on the other hand). In general, Section 23A and Regulation W limit the total amount of covered transactions between a bank and any single affiliate to 10% of the bank's capital stock and surplus, limit the total amount of covered transactions between a bank and all its affiliates to 20% of the bank's capital stock and surplus, prohibit a bank from purchasing low-quality assets from an affiliate and require certain covered transactions to be secured with prescribed amounts of collateral. Covered transactions include, among other things, extensions of credit, guarantees and purchases of assets. Section 23B generally requires that transactions between a bank and its affiliates be on terms that are at least as favorable to the bank as the terms that would apply in comparable transactions between the bank and a third party. Dodd-Frank amended Section 23A of the Federal Reserve Act to include as a covered transaction the credit exposure of a bank to an affiliate arising from a derivative transaction with the affiliate. The Federal Reserve has yet to propose rules to implement these revisions.

The Federal Reserve Act and Federal Reserve regulations also place quantitative limitations and conditions on extensions of credit by a bank to its executive officers, directors, or principal shareholders and their related interests (including any company controlled by such persons). Generally, extensions of credit by a bank to such individuals, companies and related interests must comply with certain individual and aggregate lending limits, as well as procedural and qualitative requirements. As a result of the amount of PNC common stock held by its advised mutual funds and other accounts, the Vanguard Group is considered a principal shareholder of PNC Bank for purposes of these regulations. The federal banking agencies have issued an interagency statement addressing the application of these insider lending restrictions to the other portfolio companies owned or controlled by the advised funds and accounts of a fund complex that could be considered a principal shareholder of a bank, which is effective through the sooner of January 1, 2024, and the effective date of a final Federal Reserve rule that addresses the treatment of extensions of credit by a bank to fund complex-controlled portfolio companies that are considered insiders of the bank. The statement explains that the federal banking agencies will continue to exercise discretion to not take enforcement action against either a fund complex that is a principal shareholder of a bank, or a bank for which a fund complex is a principal shareholder, with respect to extensions of credit by the bank to the related interests of such fund complex that otherwise would violate the insider lending restrictions, subject to certain conditions.

The Federal Reserve and the OCC have provided guidance regarding incentive and other elements of compensation provided to executives and other employees at banking organizations they regulate, both as general industry-wide guidance and guidance specific to select larger companies, including PNC. These guidelines are intended to ensure that the incentive compensation practices of covered banking organizations do not encourage excessive risk-taking. Dodd-Frank requires the Federal Reserve, the OCC, the FDIC, the SEC and two other regulatory agencies to adopt regulations governing incentive compensation provided by regulated financial services companies to their executives and other employees. These agencies jointly proposed regulations in 2011 and again in 2016 to implement these requirements. Final regulations have not been adopted.

The trust, investment advisory and other fiduciary activities conducted by PNC Bank also are subject to the OCC's regulations governing the fiduciary activities of national banks, as well as applicable state fiduciary laws. The OCC's regulations, among other things, set standards for the administration of fiduciary accounts, prohibit or govern potential conflicts of interests and establish recordkeeping requirements for fiduciary accounts.

The Federal Reserve's prior approval is required whenever we propose to acquire all or substantially all of the assets of any bank, to acquire direct or indirect ownership or control of more than 5% of any class of voting securities of any bank or BHC, or to merge or consolidate with any other BHC. In reviewing the merger of BHCs, the acquisition of banks or the acquisition of voting securities of a bank or BHC, the factors the Federal Reserve must consider include (i) the competitive effects of the proposal in the relevant geographic markets; (ii) the financial and managerial resources and future prospects of the companies and banks involved in the transaction; (iii) the effect of the transaction on the financial stability of the U.S.; (iv) the organizations' compliance with anti-money laundering laws and regulations; (v) the convenience and needs of the communities to be served; and (vi) the records of performance under the CRA of the insured depository institutions involved in the transaction. On July 9, 2021, President Biden signed an executive order that, among other things, recommended that the U.S. Department of Justice and federal banking agencies update guidelines on banking mergers to provide more robust scrutiny of mergers.

The Federal Reserve's prior approval also is required, and similar factors are considered, for a BHC to acquire direct or indirect ownership or control of more than 5% of any class of voting securities of a savings association or savings and loan holding company, or to merge or consolidate with a savings and loan holding company. In cases involving interstate bank acquisitions, the Federal Reserve also must consider the concentration of deposits nationwide and in certain individual states. A BHC is generally prohibited from merging or consolidating with, or acquiring, another company or bank if upon consummation the resulting company would control 10% or more of deposits in the U.S. or a state, or if the resulting company's liabilities would exceed 10% of the aggregate liabilities of the U.S. financial sector (including the U.S. liabilities of foreign financial companies). In extraordinary cases, the FSOC, in conjunction with the Federal Reserve, could order the break-up of financial firms that are deemed to present a grave threat to the financial stability of the U.S.

OCC prior approval is required for PNC Bank to acquire another insured bank or savings association by merger or to acquire deposits or substantially all of the assets of such institutions. In deciding whether to approve such a transaction, the OCC is required to consider factors similar to those that must be considered by the Federal Reserve in connection with the acquisition of a bank or BHC. Approval of the OCC and the FDIC is required to merge a non-bank entity into PNC Bank.

The Federal Reserve also has issued rules governing when a BHC is presumed to "control" another company for purposes of the BHC Act, thereby causing the company to be considered a subsidiary for purposes of the BHC Act. The rules establish a set of presumptions identifying when a BHC would be deemed to control another company, with the nature and scope of relationships a BHC may have with a non-controlled company (*e.g.*, director or officer representatives, scope of business relationships, etc.) declining as the BHC's voting ownership percentage in the company increases.

<u>*FDIC Insurance and Related Matters*</u>. PNC Bank is insured by the FDIC and subject to deposit premium assessments. PNC Bank, as an insured depository institution with over $50 billion in assets and controlled by a BHC with over $500 billion in assets on a consolidated basis, is a "highly complex institution" under the FDIC's methodology for determining premium assessments. Regulatory matters could increase the cost of FDIC deposit insurance premiums to an insured bank as FDIC deposit insurance premiums are "risk based." Therefore, higher fee percentages would be charged to banks that have lower capital ratios or higher risk profiles. These risk profiles take into account, among other things, weaknesses that are found by the primary federal banking regulator through its examination and supervision of the bank and the bank's holdings of assets or liabilities classified as higher risk by the FDIC, including brokered deposits. A negative evaluation by the FDIC or a bank's primary federal banking regulator could increase the costs to a bank and result in an aggregate cost of deposit funds higher than that of competing banks in a lower risk category.

PNC Bank is subject to certain enhanced deposit insurance recordkeeping requirements adopted by the FDIC, which are designed to assist the FDIC to promptly determine whether, or to what extent, a large bank's deposits are covered by deposit insurance if the bank were to fail.

Federal banking laws and regulations also apply a variety of requirements or restrictions on insured depository institutions with respect to brokered deposits. For instance, only a "well capitalized" insured depository institution may accept brokered deposits without prior regulatory approval. In addition, brokered deposits are generally subject to higher outflow assumptions than other types of deposits for purposes of the LCR. The FDIC has issued rules and guidance for determining whether deposits are considered "brokered."

<u>*Resolution and Recovery Planning.*</u> BHCs that have $100 billion or more in assets, such as PNC, are required to periodically submit to the Federal Reserve and the FDIC a resolution plan (including a public summary) that includes, among other things, an analysis of how the company could be resolved in a rapid and orderly fashion if the company were to fail or experience material financial distress. The Federal Reserve and the FDIC may jointly impose restrictions on a covered BHC, including additional capital requirements or limitations on growth, if the agencies jointly determine that the company's plan is not credible or would not facilitate a rapid and orderly resolution of the company under the U.S. Bankruptcy Code (or other applicable resolution framework), and additionally could require the company to divest assets or take other actions if the company did not submit an acceptable resolution plan within two years after any such restrictions were imposed. PNC generally must file a resolution plan with the Federal Reserve and FDIC at least once each three-year period, with submissions alternating between a full plan and a plan targeted on certain areas or subjects identified by the agencies. The agencies, however, have reserved the ability to alter the scheduled filing date for a covered company, request an interim update before a covered company's next scheduled filing date and require a covered company to submit a full resolution plan in lieu of a scheduled targeted plan. PNC filed a targeted resolution plan in December 2021 and received feedback from the agencies in December 2022 that did not identify any shortcomings or deficiencies in PNC's plan.

In addition to the proposed long-term debt requirements noted above, the Federal Reserve's and FDIC's October 2022 advance notice of proposed rulemaking solicited input on other potential changes to the resolution-related requirements applicable to large banking organizations like PNC that are not GSIBs. The advance notice of proposed rulemaking solicited comments and posed specific questions on whether to impose GSIB-like resolution requirements on large banking organizations that are not GSIBs, including a "clean holding company" requirement that would prohibit top-tier holding companies from entering certain financial arrangements (such as short-term borrowing or derivative contracts), separability requirements, the Federal Reserve's supervisory guidance on recovery planning, and certain disclosure requirements currently applicable to GSIBs. Such requirements could, among other things, increase PNC's borrowing costs, require the implementation of new operational capabilities, and require changes to PNC's resolution strategies at the holding company level and bank level.

The FDIC also requires large insured depository institutions, including PNC Bank, to periodically submit a resolution plan (including a public summary) to the FDIC that includes, among other things, an analysis of how the institution could be resolved under the FDI Act in a manner that protects depositors and limits losses or costs to creditors of the bank in accordance with the FDI Act. In January 2021, the FDIC lifted the moratorium that it had instituted on resolution plan filings by insured depository institutions. PNC Bank filed its resolution plan in December 2022 and is awaiting feedback from the FDIC.

PNC Bank also is subject to OCC guidelines that establish standards for recovery planning. These guidelines require a covered bank to develop and maintain a recovery plan that is evaluated and updated annually that, among other things, identifies a range of options that could be undertaken by the covered bank to restore its financial strength and viability should identified triggering events occur. The recovery plan guidelines are enforceable in the same manner as the other guidelines the OCC has established.

CFPB Regulation and Supervision. The CFPB examines PNC and PNC Bank for compliance with a broad range of federal consumer financial laws and regulations, including the laws and regulations that relate to deposit products, credit card, mortgage, automobile, student and other consumer loans, and other consumer financial products and services that we offer. The consumer financial protection laws that are subject to the CFPB's supervision and enforcement powers include, among others, the Truth in Lending Act, Truth in Savings Act, Home Mortgage Disclosure Act, Fair Credit Reporting Act, Electronic Funds Transfer Act, Real Estate Settlement Procedures Act, Fair Debt Collections Practices Act, Equal Credit Opportunity Act and Fair Housing Act. The CFPB also has authority to take enforcement actions to prevent and remedy acts and practices relating to consumer financial products and services that it deems to be unfair, deceptive or abusive, and to impose new disclosure requirements for any consumer financial product or service.

The CFPB may issue regulations that impact products and services offered by PNC or PNC Bank. The regulations could reduce the fees that we receive, require that we provide additional consumer disclosures, alter the way we provide our products and services, impair our ability to compete with other providers of financial products or services, or expose us to greater risk of private litigation or regulatory enforcement action. The CFPB has engaged in rulemakings that affect, among other things, consumer remittance transfers, the qualified mortgage definition under the Truth in Lending Act, the Home Mortgage Disclosure Act, the Fair Debt Collection Practices Act, and payday, vehicle title, and certain high-cost installment loans and may establish, or modify, rules governing other aspects of consumer financial products or services in the future.

Securities and Derivatives Regulation

Our registered broker-dealers and investment adviser subsidiaries are subject to the Exchange Act, and the Investment Advisers Act of 1940, respectively, and related rules and regulations promulgated by the SEC. These rules, for example, require that broker-dealers and investment advisers act in a customer's best interest when making investment recommendations to retail customers, which includes managing conflicts of interest, providing required disclosures and exercising a duty of care in making investment recommendations. FINRA is the primary self-regulatory organization for our registered broker-dealer subsidiaries. Our broker-dealer and investment adviser subsidiaries also are subject to additional regulation by states or local jurisdictions.

The SEC and FINRA have active enforcement functions that oversee broker-dealers and investment advisers and can bring actions that result in fines, restitution, a limitation on permitted activities, disqualification to continue to conduct certain activities and an inability to rely on certain favorable exemptions. Certain types of infractions and violations also can affect our ability to expeditiously issue new securities into the capital markets. In addition, certain changes in the activities of a broker-dealer require approval from FINRA, and FINRA takes into account a variety of considerations in acting upon applications for such approval, including internal controls, capital levels, management experience and quality, prior enforcement and disciplinary history and supervisory concerns.

The CFTC regulates swap dealers, other than security-based swap dealers, which are regulated by the SEC. PNC Bank is provisionally registered as a swap dealer with the CFTC. Because of the limited volume of our security-based swap dealing activities, PNC Bank has not registered (and currently does not intend to register) with the SEC as a security-based swap dealer.

PNC Bank's derivatives and foreign exchange businesses are subject to the regulations and requirements imposed on CFTC-registered swap dealers, and the CFTC (and for certain delegated responsibilities, the National Futures Association) has a meaningful supervisory role with respect to PNC Bank's derivatives and foreign exchange businesses. The CFTC's regulations are intended to (i) address systemic risk issues, (ii) bring greater transparency to the derivatives and foreign exchange markets, (iii) provide enhanced disclosures and protections to customers and (iv) promote market integrity. Among other things, these regulations (i) require that, absent certain specified exemptions, most standardized swaps be centrally cleared through a regulated clearing house and be traded on a centralized exchange or swap execution facility; (ii) subject PNC Bank to capital requirements in excess of historical practice; (iii) subject PNC Bank to comprehensive recordkeeping, regulatory reporting and real-time public reporting requirements; (iv) subject PNC Bank to various business conduct requirements, including the provision of daily marks to counterparties and disclosing to counterparties (pre-execution) the material risks, material incentives and any conflicts of interest associated with their swap; (v) impose special duties on PNC Bank when transacting a swap with a "special entity" (*e.g.*, governmental agency (federal, state or local) or political subdivision thereof, pension plan or endowment); and (vi) impose margin requirements on certain swaps that are not centrally cleared through a regulated clearing house.

The regulations and requirements applicable to PNC Bank, as a provisionally registered CFTC swap dealer, impose compliance burdens on PNC Bank and introduce additional legal risks (including as a result of applicable anti-fraud and anti-manipulation provisions and private rights of action). In addition, failure to comply with the "pay-to-play" regulations that govern our swap and municipal securities businesses could result in limitations on PNC Bank's ability to conduct swap and municipal securities business with state or local governments and their authorities.

Regulations of Other Agencies
In addition to regulations issued by the federal banking, securities and derivatives regulators, we also are subject to regulations issued by other federal agencies with respect to certain financial products and services we offer. For example, certain of our fiduciary, brokerage and investment management activities are subject to regulations issued by the Department of Labor under ERISA and related provisions of the Internal Revenue Code.

Competition

We are subject to intense competition from other regulated banking organizations, as well as various other types of financial institutions and non-bank entities that can offer a number of similar products and services without being subject to bank regulatory supervision and restrictions.

Our businesses compete for deposits and/or loans with:
- Other commercial banks,
- Savings banks,
- Credit unions,
- Consumer finance companies,
- Leasing companies,
- Other non-bank lenders,
- Financial technology companies,
- Treasury management service companies,
- Insurance companies,
- Issuers of commercial paper and other securities, including mutual funds, and
- Other international money transfer businesses.

In providing asset management services, our businesses compete with:
- Investment management firms,
- Large banks and other financial institutions,
- Brokerage firms,
- Financial technology companies,
- Mutual fund complexes, and
- Insurance companies.

Our various non-bank businesses engaged in investment banking and alternative investment activities compete with:
- Commercial banks,
- Investment banking firms,
- Collateralized loan obligation managers,
- Hedge funds,
- Mutual fund complexes,
- Merchant banks,
- Insurance companies,
- Private equity firms, and

- Other investment vehicles.

Competition is based on a number of factors including pricing, product structure, the range of products and services offered and the quality of customer service. Loan pricing, structure and credit standards are extremely important as we seek to achieve appropriate risk-adjusted returns. Deposit-taking activities are also subject to pricing pressures and to customer migration as a result of intense competition for deposits and investments. Competitors may seek to compete with us through traditional channels such as physical locations or through digital channels such as the internet or mobile applications. We include here by reference the additional information regarding competition and factors affecting our competitive position included in Item 1A Risk Factors of this Report.

Human Capital

We place great importance on having the right people in the right roles, with the right skills, and doing their best work. By focusing on the growth and development of our talented team members, we believe we are best positioned to deliver results for our customers. We believe when our employees deliver for our customers, they deliver for our communities and shareholders as well.

PNC devotes substantial resources to managing and developing human capital. Our Board of Directors provides oversight of our human capital management strategies, programs and policies developed by our Chief Human Resources Officer and senior management team and is assisted by our Board's Nominating and Governance and Human Resources Committees. Our Management Level Executive Committee assists and makes recommendations to our Chief Executive Officer and Board of Directors on human capital matters.

The Board of Directors also includes a Special Committee on Equity & Inclusion, which assists the Board in its oversight of management's equity and inclusion efforts. Additionally, under the leadership of the Chief Corporate Responsibility Officer, PNC operates a corporate responsibility department. The Chief Corporate Responsibility Officer is a member of the Executive Committee, reporting directly to the Chief Executive Officer. The Board of Directors provides formal oversight of the company's corporate responsibility strategy and regularly reviews policies, programs and strategies foundational to the work of the corporate responsibility department. Additionally, our Corporate Diversity Council is co-chaired by our Chief Executive Officer and Chief Diversity Officer and includes senior leaders from across the organization. The council is responsible for overseeing strategic corporate initiatives that impact the creation and sustainment of an inclusive corporate culture and a talented, diverse workforce.

Employees totaled 61,545 at December 31, 2022. This total included 59,894 full-time and 1,651 part-time employees, of which 32,467 full-time and 1,577 part-time employees were employed in our Retail Banking business.

Part of PNC's ability to compete effectively depends on our ability to attract new employees and retain and develop our existing employees. In support of our employees, our strategic human capital goals include:

- Advancing PNC's talent-focused culture by developing strong leaders who exemplify our Leadership Standards, a set of standards designed to hold managers accountable for intentional inclusion, living our corporate values, enabling change, achieving results and developing the best talent and providing them with the tools and insights to effectively manage our people.
- Focusing on the development and retention of diverse, high performing talent and providing employees with opportunities for professional growth, career mobility and health and financial wellness.
- Supporting a strong, ethical culture anchored in our corporate values and doing the right thing for our employees, customers, communities and shareholders.
- Continuing to focus on improving workforce diversity and creating an equitable and inclusive work place.

In managing our employees, we focus on these key factors:

- *Recruiting, developing and retaining talent*. We believe recruiting, developing and retaining talent starts with our leaders, and we measure our managers against our Leadership Standards. Our talent priority is to invest in the development of our internal talent and to provide career advancement opportunities to our employees. We measure how many open requisitions we fill with internal candidates, participation in early career development programs and turnover. At our first-level and above career bands we fill approximately 56% of our open requisitions with internal candidates, which has a direct impact on our ability to retain and develop our people. In addition, we hire approximately 500 interns and 500 full-time development program associates each year from our 11 early career development programs that support each of our lines of business and support areas.
- *Diversity, equity and inclusion*. We focus on attracting, developing and retaining a diverse workforce that reflects and is equipped to meet the needs of our diverse customer base. Based on employee self-disclosure, we measure representation of LGBTQ+, people with disabilities, veterans and women, and across all races and certain ethnicities. As of December 31, 2022, approximately 59% of PNC's workforce and 51% of PNC's employees in managerial roles were women. People of color represented approximately 35% of PNC's workforce, including 26% of our employees in managerial roles, as of

December 31, 2022. As part of building a pipeline of diverse talent, 73% of the early career development program participants in 2022 were diverse, including LGBTQ+, women, veterans, people of color and those with a disability.

- *Total rewards*. We are committed to providing competitive compensation and benefits programs as part of our overall strategy to retain and recruit diverse talent. We design our compensation and benefits programs to focus on three key aspects of employee well-being: health, money and quality of life. These programs include competitive base salaries and, depending on eligibility, cash incentive and/or stock-based award opportunities, an Employee Stock Purchase Plan, a 401(k) Plan with employer match, a pension plan, healthcare, life insurance and disability benefits, health savings and dependent care flexible spending accounts, paid time off, paid maternity and parental leave, family care resources, flexible work schedules, a robust wellness program with incentives, adoption assistance, employee assistance programs and educational assistance, among others. Additionally, we conduct pay equity analyses to determine if employees are being compensated fairly and consistently across roles.
- *Employee engagement*. Twice a year, PNC conducts employee surveys to measure employee engagement because we believe that engaged employees have lower attrition rates and improved customer outcomes.

Climate Change Strategy

We recognize that environmental issues, such as climate change, could pose significant financial, legal and reputational risk to PNC. We support the transition to a low-carbon economy by striving to manage our physical footprint in a sustainable manner, incorporating climate-related risk considerations into our ERM framework, integrating responsible investing strategies into our investment and portfolio management practices, and helping clients finance their own sustainability goals. These tenets have been incorporated into our Climate Action Strategy that was formalized at the start of 2022 to set us on a pathway to finance the transition to a low-carbon economy. Our approach will be iterative and flexible, highlighting five main areas: employee engagement; long-term collaboration with stakeholders, external partners and industry groups; support for our customers' transition plans; executing on our own operation sustainability goals; and portfolio alignment over time, emphasizing climate risk identification and management, and financed emissions calculations as initial work sets.

Our governance of climate issues seeks to ensure an appropriate balancing of environmental considerations with other organizational priorities as we pursue our purpose of helping all of our stakeholders move forward financially. PNC's Board oversees the environmental, social and governance issues most relevant to PNC's business and our climate change-related efforts. Specific internal working groups, engaging with relevant stakeholders within PNC, then carry out these efforts. In addition, we have an established risk management framework that helps identify, assess, monitor and report on environmental and social risks, including those related to climate change. PNC's recently established Climate Risk Committee specifically oversees the integration of climate-related risks into the ERM Framework.

We assess climate change risks under two distinct categories: transition risks and physical risks. Transition risks are experienced as the world moves toward a low-carbon economy and becomes less reliant upon fossil fuels. They can be reputational in nature or driven by changes in the market, technology and/or policy. Because transition risks are typically experienced to a greater degree in the short- to medium-term, they are dependent upon near-term policy decisions. Physical risks arise from risks associated with natural perils, such as hurricanes, fires, floods and drought. Physical risks may increase due to a changing climate, and we believe such increased risks are realized to a greater degree in the medium- to long-term. Transition and physical risks each requires a different risk management approach, and we explore a range of possible outcomes to gain insight on how to best manage these risks.

For more information on PNC's climate change-related risks, see Item 1A Risk Factors and the Credit Risk Management section of this Report.

SEC Reports and Corporate Governance Information

We are subject to the informational requirements of the Exchange Act and, in accordance with the Exchange Act, we file annual, quarterly and current reports, proxy statements, and other information with the SEC. Our SEC File Number is 001-09718.

The SEC maintains a website at www.sec.gov that contains reports, including exhibits, proxy and information statements, and other information about issuers, like us, who file electronically with the SEC. You can also inspect reports, proxy statements and other information about us at the offices of the New York Stock Exchange, 20 Broad Street, New York, New York 10005.

We make our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed with or furnished to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act available free of charge on our internet website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Our corporate internet address is www.pnc.com, and you can find this information at www.pnc.com/secfilings. Shareholders and bondholders may obtain copies of these filings without charge by contacting PNC Investor Relations at 800-843-2206 or via the request financial information form at www.pnc.com/investorrelations for copies without exhibits, or via e-mail to investor.relations@pnc.com for copies of exhibits, including financial statement and schedule exhibits where applicable. The interactive data file (XBRL) exhibit is only available electronically.

Information about our Board of Directors and its committees and corporate governance, including our PNC Code of Business Conduct and Ethics (as amended from time to time), is available on our website at www.pnc.com/corporategovernance. In addition, any future waivers from a provision of the PNC Code of Business Conduct and Ethics covering any of our directors or executive officers (including our principal executive officer, principal financial officer, and principal accounting officer or controller) will be posted at this internet address.

Shareholders who would like to request printed copies of the PNC Code of Business Conduct and Ethics or our Corporate Governance Guidelines or the charters of our Board's Audit, Nominating and Governance, Human Resources, or Risk Committees (all of which are posted on our website at www.pnc.com/corporategovernance) may do so by sending their requests to our Corporate Secretary at The PNC Financial Services Group, Inc at The Tower at PNC Plaza, 300 Fifth Avenue, Pittsburgh, Pennsylvania 15222-2401. Copies will be provided without charge.

Internet Information

The PNC Financial Services Group, Inc.'s financial reports and information about its products and services are available on the internet at www.pnc.com. We provide information for investors on our corporate website under "About Us – Investor Relations." We use our Twitter account, @pncnews, as an additional way of disseminating to the public information that may be relevant to investors.

We generally post the following under "About Us – Investor Relations" shortly before or promptly following its first use or release: financially-related press releases, including earnings releases and supplemental financial information, various SEC filings, including annual, quarterly and current reports and proxy statements, presentation materials associated with earnings and other investor conference calls or events, and access to live and recorded audio from earnings and other investor conference calls or events. In some cases, we may post the presentation materials for other investor conference calls or events several days prior to the call or event. For earnings and other conference calls or events, we generally include in our posted materials a cautionary statement regarding forward-looking and non-GAAP financial information, and we provide GAAP reconciliations when we include non-GAAP financial information. Such GAAP reconciliations may be in materials for the applicable presentation, in materials for prior presentations or in our annual, quarterly or current reports.

When warranted, we will also use our website to expedite public access to time-critical information regarding PNC instead of using a press release or a filing with the SEC for first disclosure of the information. In some circumstances, the information may be relevant to investors but directed at customers, in which case it may be accessed directly through the home page rather than "About Us - Investor Relations."

We are required to provide additional public disclosure regarding estimated income, losses and pro forma regulatory capital ratios under supervisory and PNC-developed hypothetical severely adverse economic scenarios, as well as information concerning our capital stress testing processes, pursuant to the stress testing regulations adopted by the Federal Reserve and the OCC. We are also required to make certain additional regulatory capital-related public disclosures about our capital structure, risk exposures, risk assessment processes, risk-weighted assets and overall capital adequacy, including market risk-related disclosures, under the regulatory capital rules adopted by the Federal banking agencies. Similarly, the Federal Reserve's rules require quantitative and qualitative disclosures about our LCR and, beginning in 2023, our NSFR. Under these regulations, we may satisfy these requirements through postings on our website, and we have done so and expect to continue to do so without also providing disclosure of this information through filings with the SEC.

Other information posted on our corporate website that may not be available in our filings with the SEC includes information relating to our corporate governance and annual communications from our chairman to shareholders.

Where we have included internet addresses in this Report, such as our internet address and the internet address of the SEC, we have included those internet addresses as inactive textual references only. Except as specifically incorporated by reference into this Report, information on those websites is not part hereof.

ITEM 1A – RISK FACTORS

We are subject to a number of risks potentially impacting our business, financial condition, results of operations and cash flows. As a financial services company, certain elements of risk are inherent in what we do and the business decisions we make. Thus, we encounter risk as part of the normal course of our business, and we design risk management processes to help manage these risks.

Our success is dependent on our ability to identify, understand and manage the risks presented by our business activities so that we can appropriately balance risk taking with revenue generation and profitability. We discuss our principal risk management oversight and processes and, in appropriate places, related historical performance and other metrics in the Risk Management section of this Report.

The following are the material risk factors that affect us of which we are currently aware. Any one or more of these risk factors could have a material adverse impact on our business, financial condition, results of operations or cash flows. In addition, these risks present other possible adverse consequences, including those described below. These risk factors and other risks we face are also discussed further in other sections of this Report. Thus, the risk factors below should not be considered a complete list of potential risks that we may face.

Summary

The following is a summary of the Risk Factors in this Item 1A:

- Our business and financial performance are vulnerable to the impact of adverse economic conditions.
- The policies of the Federal Reserve and other governmental agencies and the impact of government legislation, regulation and policy and other political factors on the economy, interest rates, overall financial market performance and banking organizations could have an adverse effect on our business and financial performance and our ability to pay dividends or otherwise return capital to shareholders.
- A downgrade in our credit ratings could significantly impact our liquidity, funding costs and access to the capital markets.
- The scheduled cessation of LIBOR presents risks to the financial instruments originated, held or serviced by PNC that use LIBOR as a reference rate.
- Climate change-related risks could adversely affect our business and performance, including indirectly through impacts on our customers.
- We are subject to risks related to the use of technology which is critical to our ability to maintain or enhance the competitiveness of our businesses and is dependent on having the right to use its underlying intellectual property. We could also suffer a material adverse impact from interruptions in the effective operation of our information systems and other technology, including as a result of third-party breaches of data security either at PNC or at third parties handling PNC information.
- Our business and financial results are subject to risks associated with the creditworthiness of our customers and counterparties, the concentration and mix of our assets, market interest rates and movements in those rates and changes in the values of financial assets.
- We are subject to risks related to the selection of accounting methods, inaccurate estimates and assumptions and to risks related to poorly designed and implemented models that are extensively used in our business.
- We operate in a highly competitive environment and our success depends on our ability to attract and retain customers and talented employees and we are at risk for an adverse impact on our business due to damage to our reputation.
- We are subject to operational risks as a result of our dependence on the effectiveness and integrity of our employees and internal systems and on third-party vendors, service providers and other counterparties over whom we do not have direct control.
- We are subject to risks related to growing our business by acquiring other financial services business from time to time as these acquisitions present a number of risks and uncertainties related both to the acquisition transactions themselves and to the integration of the acquired businesses into PNC after closing.

Risks Related to the Economy and Other External Factors, Including Regulation

Our business and financial performance are vulnerable to the impact of adverse economic conditions.

As a financial services company, our business and overall financial performance are affected to a significant extent by economic conditions, primarily in the U.S.

Declining or adverse economic conditions and adverse changes in investor, consumer and business sentiment generally result in reduced business activity, which may decrease the demand for our products and services or reduce the number of creditworthy borrowers. The ability of borrowers to repay loans is often weakened as a result of economic downturns and higher inflation and unemployment. This may be further exacerbated by the expiration of pandemic-related government assistance in the U.S., which could lead to a decrease in economic activity and a deterioration in households' finances, particularly if consumers also continue to face high inflation. In addition, periods of inflation may affect certain of our costs or expenses (including increasing our cost of capital and labor), erode consumer and customer purchasing power, confidence and spending and may also reduce our tolerance for extending credit. Increases in costs or expenses impacting our customers' operations and financial performance, such as the interest rates payable on their debt obligations, could increase our credit risk or decrease the demand for our products and services.

While the U.S. economy has generally improved since the onset of the COVID-19 pandemic, we now operate in an uncertain economic environment as a result of the impacts of the pandemic and responsive measures to manage it, high inflation, supply chain disruptions, changes in the labor markets, volatile energy prices and geopolitical tensions (including as a result of the Russia-Ukraine conflict). These conditions may not abate in the near term, and their continuation could materially adversely affect our operations and financial performance. Such economic conditions also have led and may continue to lead to turmoil and volatility in financial markets, often with at least some financial asset categories losing value. Any of these effects would likely have an adverse impact on our operations and financial performance, with the significance of the impact generally depending on the nature and severity of the adverse economic conditions.

Even when economic conditions are relatively good or stable, specific economic factors can negatively affect our business and performance. This can be especially true when the factors relate to particular segments of the economy. For example, shifting consumer behavior with respect to retail purchases being made over the internet rather than in physical stores has negatively impacted performance by some retailers. This likely decreases demand for financial services in that sector, possibly harming the creditworthiness of some shopping mall operators, retail companies and others with whom we do business. As another example, we could experience an increase in credit losses as a result of structural and secular changes fostered by the pandemic for certain sectors of the economy. In addition, remote work has adversely affected and may continue to adversely affect commercial real estate, as well as businesses whose customers have historically been office workers. Affected companies have experienced and may continue to experience lower levels of business and possible declining creditworthiness.

Given the geographic scope of our business and operations, we are most exposed to issues within the U.S. economy and financial markets. Our foreign business activities continue to be a relatively small part of our overall business. As a result, the direct impact on our business and financial performance from economic conditions outside the U.S. is not likely to be significant, although the impact would increase if we expanded our foreign business more than nominally. We are, however, susceptible to the risk that foreign economic conditions could negatively affect our business and financial performance. Primarily, this risk results from the possibility that poor economic conditions or financial market disruptions affecting other major economies would also affect the U.S.

Throughout the remainder of this Risk Factors section, we address specific ways in which economic issues could create risk for us and result in adverse impacts on our business and financial performance.

The impact of government legislation, regulation and policy and other political factors on the economy could have an adverse effect on our business and financial performance.

Changes in law or governmental policy affecting the economy, business activity, or personal spending, investing or saving activities may cause consumers and businesses to alter their behavior in ways that impact demand for our products and services. Such changes may also alter the profitability of the transactions in which we engage or result in increased regulatory burden and associated costs. PNC may alter the types or terms of the products and services we offer to reflect such changes. Uncertainty regarding future law or policy may have similar impacts. In addition, the application of some laws may be uncertain, require significant judgment and be subject to differing interpretations. Congress and the agencies that regulate us have changed and may continue to change the laws and policies that are applicable to us, including their interpretations of rules and guidelines, which has subjected and may continue to subject financial institutions like us to heightened levels of regulation and supervision and more stringent enforcement and potentially severe penalties. For example, the increased time frames and difficulty in obtaining regulatory approvals for acquisitions and other activities could affect our ability to make acquisitions or introduce new products and services. As another example, tax laws and tax rates may be subject to significant change and an increase in our effective tax rates could adversely affect our business, results of operation and financial condition. In addition, these changes may adversely impact our operations or financial condition as discussed in more detail in the Risk Factor headed “As a regulated financial services firm, we are subject to numerous governmental regulations and comprehensive oversight by a variety of regulatory agencies and enforcement authorities. These regulations and the way they are implemented can have a significant impact on our businesses and operations and our ability to grow and expand.”

Some of the legislation responsive to the COVID-19 pandemic (such as the CARES Act and the Consolidated Appropriations Act that provided for certain commercial and consumer protections) altered the profitability of the transactions in which we engage, and other laws related to employee benefits increased administrative, compensation and benefits costs to us. Other such laws may be enacted in response to other extraordinary events beyond PNC’s control that have similar or broader effects on us and could adversely affect our financial condition and results of operations, possibly materially, in other ways that are not now known to us.

Concern regarding the ability of Congress and the President collectively to reach agreement on federal budgetary matters (including the debt ceiling), or prolonged stalemates leading to total or partial governmental shutdowns, also can have adverse economic consequences and create the risk of economic instability or market volatility, with potential adverse consequences to our business and financial performance. Divided control of the U.S. government may increase concern over the inability of Congress and the President to reach necessary agreements and make government shutdowns or defaults in government obligations more likely.

The policies of the Federal Reserve and other governmental agencies have a significant impact on interest rates and overall financial market performance, which are important to our business and financial performance.

The monetary policies of the Federal Reserve, including changes in the federal funds rate, open market operations and balance sheet management, have a significant impact on interest rates, the value of financial instruments and other assets and liabilities, and overall financial market performance and volatility. These policies can thus affect the activities and results of operations of financial companies such as PNC. An important function of the Federal Reserve is to monitor the national supply of bank credit and set certain interest rates. The actions of the Federal Reserve influence the rates of interest that we charge on loans and that we pay on borrowings and interest-bearing deposits. Rates of interest can also affect the value of our on-balance sheet and off-balance sheet financial instruments.

The FOMC has increased its benchmark rates from a range of 0% to 0.25% from March 2020 through 2021 to 4.75% as of February 1, 2023 in an effort to reduce high rates of inflation. Although we may not accurately predict the nature or timing of future changes in monetary policies or the precise effects that they may have on our activities and financial results, we anticipate that the FOMC will increase the federal funds rate by an additional 25 basis points in March. This would bring the federal funds rate to a range of 4.75% to 5.00% by mid-March. We expect a federal funds rate cut of 25 basis points in early 2024 as inflation moves toward the FOMC's 2% long-term objective.

In addition, actions by governmental authorities in other countries, including with respect to monetary policy, could impact financial markets and global interest rates, which could affect rates in the U.S. as well as rates on instruments denominated in currencies other than the U.S. dollar, any of which could have potential effects on us as described above.

Some of the potential impacts on our business and results of governmental monetary policy are described in Risk Factors under the heading "Risks Related to the Business of Banking."

As a regulated financial services firm, we are subject to numerous governmental regulations and comprehensive oversight by a variety of regulatory agencies and enforcement authorities. These regulations and the way they are implemented can have a significant impact on our businesses and operations and our ability to grow and expand.

The PNC Financial Services Group, Inc. is a BHC and a financial holding company, with the Federal Reserve as its primary regulator. PNC Bank is a federally chartered bank, with the OCC as its primary regulator. In addition, our businesses are subject to regulation by multiple other banking, consumer protection, securities and derivatives regulatory bodies. We are also subject to the jurisdiction of criminal and civil enforcement authorities.

As a result, we are subject to numerous laws and regulations, with multiple regulators or agencies having supervisory or enforcement oversight over aspects of our business activities. These laws, regulations and supervisory activities are intended to promote the safety and soundness of financial institutions, financial market stability, the transparency and liquidity of financial markets, consumer protection and to prevent money laundering and terrorist financing and are not primarily intended to protect PNC security holders. In addition to regulation in the U.S., we are also subject to foreign regulation to a limited extent as a result of our business activities outside the U.S.

Applicable laws and regulations restrict our permissible activities and investments and require compliance with provisions designed to protect loan, deposit, brokerage, fiduciary, and other customers, and for the protection of customer information, among other things. We also are subject to laws and regulations designed to combat money laundering, terrorist financing, and transactions with persons, companies or foreign governments designated by U.S. authorities. Over time, the scope of the laws and regulations affecting our businesses, as well as the number of requirements or limitations imposed by legislative or regulatory actions, has increased, and we expect to continue to face substantial regulatory oversight and new or revised regulatory requirements or initiatives. Legislative or regulatory actions can result in increased compliance costs, reduced business opportunities, or new requirements and limitations on how we conduct our business. In particular, the financial services industry continues to face heightened scrutiny, particularly with respect to BSA and AML compliance requirements and consumer compliance and protection matters. For example, under Dodd-Frank, the CFPB has broad authority to protect consumers from "unfair, deceptive and abusive acts or practices," the definition of which is being clarified through heightened instances of CFPB enforcement actions and proceedings.

The Federal Reserve requires a BHC to act as a source of financial and managerial strength for its subsidiary banks. The Federal Reserve could require PNC to commit resources to PNC Bank when doing so is not otherwise in the interests of PNC or its shareholders or creditors.

Federal law grants substantial supervisory and enforcement powers to federal banking regulators. The results of routine and non-routine supervisory or examination activities by our regulators, including actual or perceived compliance failures, could result in limitations on our ability to enter into certain transactions, engage in new activities, expand geographically, make acquisitions or obtain necessary regulatory approvals in connection therewith, or otherwise require us to modify our businesses practices in a manner that materially impacts our financial condition or results of operations. These activities also could result in significant fines, penalties or required corrective actions, some of which could be expensive and difficult to implement. In addition, another financial institution's violation of law or regulation may give rise to an investigation of the same or similar activities of PNC.

As we expand our product and service offerings into additional markets, domestic or foreign, either through organic growth or acquisition, we have faced and will continue to face increases in state or foreign regulation affecting our operations. Different approaches to regulation by different jurisdictions could materially increase our compliance costs or risks of non-compliance.

A failure to comply, or to have adequate policies and procedures designed to comply, with regulatory requirements and expectations exposes us to the risk of damages, fines and regulatory penalties and other regulatory or enforcement actions or consequences, such as limitations on activities otherwise permissible for us or additional requirements for engaging in new activities and could also injure our reputation with customers and others with whom we do business. We also rely on third parties who may expose us to compliance risk. A failure to comply with regulatory requirements or deficiencies in risk management practices could be incorporated in our confidential supervisory ratings, which could limit PNC's ability to expand or require additional approvals before engaging in certain business activities.

See the immediately following Risk Factor for a discussion of risks associated with capital and liquidity regulation. Also see the Supervision and Regulation section of this Report for more information concerning the regulation of PNC, including those areas that have been receiving a high level of regulatory focus. Note 20 Regulatory Matters also discusses some of the regulations applicable to us.

We are subject to regulatory capital and liquidity standards that affect our business, operations and ability to pay dividends or otherwise return capital to shareholders.

PNC and PNC Bank are subject to regulatory capital and liquidity requirements established by the Federal Reserve and the OCC, respectively. These regulatory capital and liquidity requirements are typically developed at an international level by the Basel Committee and then applied, with adjustments, in each country by the appropriate domestic regulatory bodies. Domestic regulatory agencies can apply stricter capital and liquidity standards than those developed by the Basel Committee. In several instances, the U.S. banking agencies have done so with respect to U.S. banking organizations.

Requirements to maintain specified levels of capital and liquidity, and regulatory expectations as to the quality of our capital and liquidity, impact our business activities and may prevent us from taking advantage of opportunities in the best interest of shareholders or force us to take actions contrary to their interests. For example, PNC's ability to pay or increase dividends or otherwise return capital to shareholders is subject to PNC's compliance with its SCB, which is determined at least annually through the Federal Reserve's CCAR process. The Federal Reserve can also impose additional limitations on capital distributions, such as the limitations on distributions imposed in response to the COVID-19 pandemic and the 2007-2008 financial crisis. In addition, dividends from PNC Bank and, to a lesser extent, non-bank subsidiaries are PNC's principal source of funds to, among other things, pay dividends on and make repurchases of its capital stock. Many of our subsidiaries are subject to laws that restrict dividend payments or authorize regulatory bodies to prohibit or limit dividends to PNC. Limitations on PNC's ability to receive dividends from its subsidiaries, including PNC Bank, could have a material adverse effect on its liquidity and ability to pay dividends on and make repurchases of its capital stock, especially to the extent that PNC must first service any outstanding debt obligations.

Capital and liquidity requirements may also impact the amount and type of loans we make. We may be constrained in our ability to expand, either organically or through acquisitions. We may be forced to sell or refrain from acquiring assets where the capital requirements appear inconsistent with the assets' underlying risks. In addition, liquidity standards require us to maintain holdings of highly liquid short-term investments, thereby reducing our ability to invest in longer-term or less liquid assets, even if more desirable from an earnings, balance sheet or interest rate risk management perspective.

The Basel Committee continues to develop policies and standards for the prudential regulation of banks. See the Supervision and Regulation section of this Report. Generally, as it is unclear whether or how these initiatives will be implemented in the U.S., we are unable to estimate what potential impact such initiatives may have on us. We expect the federal banking agencies to propose rules in 2023 to implement the capital- and liquidity-related final set of Basel III standards issued by the Basel Committee in December 2017.

Regulatory capital and liquidity requirements are subject to regular review and revision by the Basel Committee and the U.S. banking agencies. For example, under the 2019 Tailoring Rules, certain BHCs are classified as Category I, Category II, Category III or Category IV firms. While PNC and PNC Bank currently are Category III firms, if PNC or PNC Bank became a Category I or II institution, we would be subject to more stringent capital and liquidity standards, which would likely increase some of the potential adverse effects described above. Future changes to the capital and liquidity rules to require PNC or PNC Bank to maintain more or higher quality capital or greater liquidity would also likely increase some of the potential adverse effects described above.

The regulatory capital and liquidity frameworks, as well as certain other prudential requirements and standards that are applicable to PNC, including related proposed rules, are discussed in the Supervision and Regulation section of this Report and the Liquidity and Capital Management portion of the Risk Management section of this Report.

A downgrade in our credit ratings could significantly impact our liquidity, funding costs and access to the capital markets.

Our credit ratings are based on a number of factors, including the financial strength of PNC and PNC Bank, and factors outside of our control, such as conditions affecting the financial services industry generally. Reductions in one or more of our credit ratings could adversely affect our ability to borrow funds and increase our cost of capital and limit the number of investors or counterparties willing to do business with or lend to us. For example, downgrades could negatively impact our right to continue to service mortgages. Downgrades could also adversely affect our ability to attract or retain customers, including deposits. In addition, a downgrade in our credit ratings could trigger obligations to make cash or collateral payments under derivative contracts with certain counterparties. There can be no assurance that we will maintain our current ratings and outlooks. For information on our credit ratings, see the Liquidity and Capital Management portion of the Risk Management section of this Report.

The scheduled cessation of LIBOR presents risks to the financial instruments originated, held or serviced by PNC that use LIBOR as a reference rate.

A significant portion of our transactions involve variable or adjustable interest rates that are calculated by adding a contractually defined credit spread to a base or reference rate. Until recently, LIBOR was the reference rate used for a substantial majority of our transactions involving variable or adjustable interest rates, including those in which we lend money, issue securities, or purchase and sell securities issued by others, as well as many derivative transactions that we enter into to manage our or our customers' risk. We also service variable or adjustable-rate financial instruments entered into by others that have historically commonly used LIBOR as the reference rate. Based upon guidance communicated by the Federal Reserve and other official sector representatives, PNC stopped entering into new USD LIBOR contracts as of December 31, 2021, subject to certain limited exceptions. However, we maintain a sizable book of owned and serviced LIBOR reference rate assets. For more information on our LIBOR reference rate assets, see the Market Risk Management portion of the Risk Management section of this Report.

As announced by ICE Benchmark Administration Limited and the U.K. Financial Conduct Authority, as of June 30, 2023, the current form of USD LIBOR will no longer be available, and any alternative form of USD LIBOR published using a new methodology for rate calculation (*i.e.*, "synthetic LIBOR") would not be a "representative" rate. As a result, most USD LIBOR reference rate assets will require a replacement reference rate on or about that time. That replacement reference rate will either be implemented consistent with contractual terms or by operation of law.

Currently, SOFR is the alternative reference rate replacing USD LIBOR for most types of transactions and, under recently enacted federal legislation addressing LIBOR cessation, is the replacement reference rate to be used for certain LIBOR contracts when LIBOR cessation occurs, including those that do not include terms for determining a replacement reference rate. LIBOR and SOFR are based on different inputs. LIBOR is intended to reflect the borrowing cost of certain global banks, while SOFR is derived from rates on overnight U.S. Treasury repurchase transactions, which are essentially overnight loans secured by U.S. Treasury securities. To address differences between LIBOR and SOFR, certain industry-recommended LIBOR contract provisions that provide a mechanism to transition to a SOFR reference rate include the concept of an adjustment spread. The adjustment spread is applied when a LIBOR-based contract moves to the SOFR replacement reference rate. These recommended adjustment spreads are based on a five-year median look-back of the historical spot difference between the applicable LIBOR tenor and the applicable SOFR tenor and were fixed on March 5, 2021 as a result of announcements by ICE Benchmark Administration (the administrator of LIBOR) and the UK Financial Conduct Authority (the regulatory supervisor of the IBA) of the dates after which all LIBOR settings will either cease to be provided or will no longer be representative. The same adjustment spreads will also be operational under current federal law.

Changing the reference rate to SOFR is highly likely to result in some value transfer between parties to instruments originally based on LIBOR, and we have experienced some value transfer in connection with instruments that have been amended away from LIBOR in anticipation of its cessation. That value transfer arises because no reference rate will replicate LIBOR exactly, and, accordingly, any replacement reference rate will not behave identically to LIBOR over time.

Any value transfer could be financially adverse or beneficial to us or to the other contracting parties (such as a borrower, derivative counterparty or bond holder). Impacts from a change in reference rate would likely include changes to the yield on, and value of, loans or securities held by us, amounts paid on securities we have issued, amounts received and paid on derivative instruments we have entered into and the trading market for LIBOR-based securities. Any theoretical benefit to us could result in counterparty dissatisfaction, which could impair relationships that result in loss of business or could lead to litigation (potentially as class actions). As a result, over the life of a transaction that transitions from LIBOR to a replacement reference rate, our monetary obligations to a counterparty (or its obligations to us) and the yield we receive (or pay) from the transaction with that counterparty may change from that which would have resulted from a continuation of LIBOR.

Another set of risks associated with LIBOR cessation relates to how the transition from LIBOR to another rate will be implemented. For some instruments, the method of transitioning to a replacement reference rate may be challenging, especially where the contract does not provide for a transition upon LIBOR ceasing or becoming a nonrepresentative rate, or where the relevant contractual language relating to a potential transition is ambiguous or inadequate under the circumstances.

For example, most bilateral, uncleared LIBOR-based interest rate derivative contracts executed prior to January 25, 2021, did not include adequate contractual provisions to address LIBOR cessation. In response, ISDA published a protocol pursuant to which industry participants can agree with any other industry participant that adheres to the protocol to include ISDA's new LIBOR replacement provisions into legacy derivative contracts. However, the new ISDA replacement provisions and the replacement provisions that have been adopted for loans would result in a mismatch between the replacement reference rate included in our borrowers' legacy derivative contracts and their loans for which such derivative contracts are intended as a hedge. Further, although we have adhered to the ISDA protocol, many "end users" of swaps (*i.e.*, our borrowers who have hedged their interest rate payment obligations) have not adhered, and we do not expect them to adhere. For these end-user counterparties, one-on-one negotiation with each counterparty is necessary to amend legacy derivative contracts to adequately address LIBOR ceasing or becoming a non-representative rate. If we are unable to agree to appropriate LIBOR cessation provisions with these counterparties, the federal law addressing LIBOR cessation will incorporate replacement provisions into these derivative contracts. However, the statutory replacement provisions may not align with replacement provisions in a loan for which the derivative contracts are intended as a hedge. As a result, addressing transition under these circumstances may be challenging, increases the risk of counterparty dissatisfaction, and, in some cases, may involve concessions on our part that have the effect of reducing the value of those instruments to us.

We have other contracts that do contemplate the cessation or nonrepresentative status of LIBOR, but they do so in manners that may create other risks. For example, some contracts provide for selecting replacement rates in a manner that presents significant challenges (such as by assuming that there would be a rate calculated substantially in the same manner as LIBOR is calculated) or that gives us or another party absolute discretion to select a replacement reference rate. Some provide for determination of a replacement reference rate without providing for use of an adjustment spread to account for the difference in the reference rates. In these types of cases, there will likely be uncertainty surrounding transition, in addition to all of the risks described in this Risk Factor.

Transitioning from LIBOR to alternative reference rates also may result in operational errors during the transition such that the replacement rate is not applied in a timely manner or is incorrectly applied. This is particularly true given the volume of contracts that will require transition, the diversity of potential approaches to transition and the possibility that the period during which the transition will need to take place may have a short duration. Our failure to successfully implement the transition from LIBOR to alternative reference rates increases the risk of regulatory scrutiny and actions by our regulators, including fines and other supervisory sanctions. It is also possible that LIBOR quotes will become unavailable prior to the currently anticipated cessation dates. In that case, the risks associated with the transition to an alternative reference rate will be accelerated and magnified. These risks may also be increased due to the shorter time for preparing for the transition.

Transitioning from LIBOR to alternative reference rates also impacts certain of our hedge accounting strategies. Uncertainty about the application of ASC 848 Reference Rate Reform to pooled cash flow hedge strategies introduces accounting risk that could affect our ability to apply this accounting in the future. See Note 1 Accounting Policies for more information about reference rate reform accounting standards impacts.

To address LIBOR cessation and the associated risks, we have established an enterprise LIBOR transition program. Any failure of this program to appropriately assess and mitigate risk and deliver in a timely manner on operationalizing our ability to transition from LIBOR to alternative reference rates could magnify the risks previously outlined.

Privacy initiatives have imposed and will continue to impose additional operational burdens on PNC, and they may limit our ability to pursue desirable business initiatives and increase the risks associated with any future use of personal data.

Recently, there has been an increase in legislative and regulatory efforts to protect the privacy of personal data, including enhanced data privacy laws regulating the use of health and biometric data. Individuals whose personal information may be protected by law may include our customers, prospective customers, job applicants, employees and third parties. These initiatives, among other things, limit how companies can use personal data and impose obligations on companies in their management of such data. Financial services companies such as PNC necessarily gather, maintain and use a significant amount of personal data. These types of initiatives increase compliance complexity and related costs, may result in significant financial penalties for compliance failures, and may limit our ability to develop new products or respond to technological changes. This is particularly true as we continue to expand our business into new markets. We are, or may become, subject to regularly evolving and developing data privacy and data security laws and regulations in other jurisdictions, including certain foreign jurisdictions even where our presence in such jurisdictions is minimal. Such legal requirements also could heighten the reputational impact of perceived misuses of personal data by us, our vendors or others who gain unauthorized access to our personal data. Other jurisdictions may adopt similar requirements that impose different and potentially inconsistent compliance burdens. The impacts will be greater to the extent requirements vary across jurisdictions.

Climate change-related risks could adversely affect our business and performance, including indirectly through impacts on our customers.

There continues to be concern, including on the part of our regulators, regarding climate change and its impacts on virtually all aspects of life over the short-, medium- and long-term horizons. These concerns over the anticipated and unanticipated impacts of climate change (including physical risk and transition risk) have led and will continue to lead to governmental efforts around the world to mitigate those impacts. We and our customers may face cost increases, asset value reductions, operations disruptions and changes and the like because of climate change (including severe weather events) and governmental actions or societal responses to climate change. The impact on our customers will likely vary depending on their specific attributes, including their reliance on or role in carbon intensive activities and their transition plans, as well as their exposure to the effects of climate change. Consumers and businesses are also changing their behaviors because of these concerns. Changed consumer and business behavior because of climate change concerns creates transition risk for PNC arising from the process of adjusting to these concerns, including transitioning to a low-carbon economy. PNC and its customers will need to respond to new laws and regulations as well as consumer and business preferences as a result. Among the impacts to PNC could be a drop in demand for our products and services, particularly in certain sectors if our products or services do not support the environmental goals of our customers, or increased losses due to the impact of climate change on the collateral that secures customer borrowings. In addition, we could face reductions in creditworthiness on the part of some customers or in the value of assets securing loans. We also have been and may continue to be subject to pressure from individuals or groups to cease doing business with certain companies or sectors because of concerns related to climate change. We are currently subject to climate-related regulatory expectations and could be subject to additional regulatory restrictions or costs associated with providing products or services to certain companies or sectors. Environmental regulations or changes in the supply, demand or available sources of energy or other resources may affect the availability or cost of goods and services necessary to run our business. Further, there is increased scrutiny of climate change-related policies, goals and disclosures, which could result in litigation and regulatory investigations and actions. We may incur additional costs and require additional resources as we evolve our strategy, practices and related disclosures with respect to these matters.

The Risk Factor headed "We are at risk for an adverse impact on our business due to damage to our reputation" further discusses risks associated with our management of environmental, social and governance matters, including related activist pressure. Our efforts to take these risks into account in making lending and other decisions may not be effective in protecting us from the negative impact of new laws and regulations or changes in consumer or business behavior, including those resulting from activist pressure. Our risk management may not be effective in identifying, measuring, monitoring and controlling climate risk exposure, particularly given that the timing, nature and severity of the impacts of climate change may not be predictable.

Risks Related to the Use of Technology

The use of technology is critical to our ability to maintain or enhance the competitiveness of our businesses.

As a large financial services company, we handle a substantial volume of customer and other financial transactions. As a result, we rely heavily on information systems to conduct our business and to process, record, monitor and report on our transactions and those of our customers. Over time, we have seen more customer usage of technological solutions for financial needs as well as higher expectations of customers and regulators regarding effective and safe systems operation. In many cases, the effective use of technology increases efficiency and enables financial institutions to better serve customers. As a result of these factors, the financial services industry is undergoing rapid technological change with frequent introductions of new technology-driven products and services. Examples include expanded use of cloud computing, artificial intelligence and machine learning, virtual and augmented reality, biometric authentication, voice and natural language, data protection enhancements and increased online and mobile device interaction with customers, including innovative ways that customers can make payments or manage their accounts. The emergence of many of these technologies was accelerated as a result of the COVID-19 pandemic and the shift to increased digital activity. We expect these trends to continue for the foreseeable future.

In response to actual and anticipated customer behavior and expectations, as well as competitive pressures, we have been investing in technology and connectivity. We are seeking to automate functions previously performed manually, facilitate the ability of customers to engage in financial transactions and otherwise enhance the customer experience with respect to our products and services. This effort has involved the expenditure of considerable amounts of funds and other resources. A failure to maintain or enhance our competitive position with respect to technology, whether because we fail to anticipate customer expectations, because our technological developments fail to perform as desired or are not rolled out in a timely manner, or because we fail to keep pace with our competitors, would likely cause us to lose market share or incur additional expense. Our ability to maintain or enhance our relative technological position is in part dependent on our ability to attract and retain talented employees in these fields, which, due to overall demand, is increasingly difficult.

Our use of technology is dependent on having the right to use its underlying intellectual property.

In some cases, we develop internally the intellectual property embedded in the technology we use. In others, we or our vendors license the use of intellectual property from others. Regardless of the source of the intellectual property, if another person or entity were deemed to own intellectual property rights infringed by our activities, we could be responsible for significant damages covering past activities and substantial fees to continue to engage in these types of activities. It also is possible that we could be prevented from using technology important to our business for at least some period of time. In such circumstances, there may be no alternative technology for us to use or an appropriate alternative technology might be expensive to obtain. Protections offered by those from whom we license technology against these risks may be inadequate to cover any losses in full. Over time, there have been and continue to be instances where technology used by PNC and other financial institutions has been alleged to have infringed patents held by others, and, in some cases, we, as well as other financial institutions, have suffered related losses.

We could suffer a material adverse impact from interruptions in the effective operation of our information systems and other technology.

The need to ensure proper functioning and resiliency of our information systems and other technology has become more important and more challenging, and the costs involved in that effort continue to be high. Our ability to create, obtain, maintain and report on information in an accurate, timely and secure manner is a foundational component of our business. Effective management of our expanded remote work environment heightens our need for secure, reliable and adequate information systems and technology. The risks of operational failures in the use of these systems result from a variety of factors. We are vulnerable to the impact of failures of our systems to operate as needed or intended. Failures leading to materially adverse impacts could include those resulting from human error, unexpected transaction volumes, or overall security, design or performance issues. In addition, our ability to use our technology effectively could be impacted due to electrical or telecommunications outages, bad weather, disasters, bad actors, terrorism and the like. Such events could affect our systems directly or limit our ability to use our technology due to effects on key underlying infrastructure. In some cases, the risk results from the potential for bad acts on the part of others, discussed in more detail in the Risk Factor headed "We are vulnerable to the risk of third-party breaches of data security affecting the functioning of systems or the confidentiality of information, either at PNC or at third parties handling PNC information."

We also rely on information systems maintained by other companies. We use other companies both to provide products and services directly to us and to assist us in providing products and services to our customers. Others provide the infrastructure that supports, for example, communications, payment, clearing and settlement systems, or information processing and storage. These companies range from those providing highly sophisticated information processing to those that provide fundamental services, such as electric power and telecommunications. In some cases, these other companies themselves utilize third parties to support their delivery of products and services to us and our customers. Systems maintained by or for these other companies are generally subject to many of the same risks we face with respect to our systems and thus their issues could have a negative impact on PNC. We necessarily have less ability to provide oversight over other companies' information systems.

A number of our customers choose to use financial applications that allow them to view banking and other financial account information, often held at different financial institutions, on a single platform, to monitor the performance of their investments, to compare financial and investment products, to make payments or transfer funds, and otherwise to help manage their finances and investments. Financial applications often ask users to provide their secure banking log-in information and credentials (such as usernames and passwords) so the applications can link to users' accounts at financial institutions. Companies offering these applications frequently use third-party data aggregators, which are behind-the-scenes technology companies that serve as data-gathering service providers, to deliver customer financial data that is then used by the financial applications. To do this, data aggregators are provided with customers' log-in information and credentials, which allow the aggregators to access the customers' online accounts and "scrape" the customers' data, often on a daily or even more frequent basis. That same information has the potential to facilitate fraud if it is not properly protected. This has resulted in incidences of fraud, including automated clearing house fraud, credit card fraud, and wire fraud, enabled through the use of synthetic identities and through account takeovers via these platforms. In some cases, cybercriminals appear to be using such data aggregators and integrators to facilitate account takeovers and fraudulent wires. PNC has and may continue to face increased financial exposure due to fraudulent activity associated with the increased use of these applications and data aggregators. In addition, transactions by customers on financial applications that facilitate payments and fund transfers have also been fraudulently induced. These transactions occur when a customer authorizes payment to a recipient that fraudulently induced the customer into transferring a payment to such recipient. Even where PNC does not have responsibility for fraud losses associated with any of these applications and data aggregators, PNC could suffer increased reputational harm when such losses occur.

Although we regularly update and replace systems that we depend on as our needs evolve and technology improves, we continue to utilize some older systems that may not be as reliable as newer ones. In addition, the implementation of and transition to new or updated systems creates risks related to associated timing and costs, disruptions in functionality for customers and longer-term failures to achieve desired improvements.

The occurrence of any failure, interruption or security breach of any of our information or communications systems, or the systems of other companies on which we rely, could result in a wide variety of adverse consequences to us. This risk is greater if the issue is widespread, extends for a significant period of time, or results in financial losses to our customers. The consequences of failures to operate systems properly can result in disruptions to our critical business operations, including our ability to use our accounting, deposit, loan, payment and other systems. Such events could also cause errors in transactions or impair system functionality with customers, vendors or other parties. Possible adverse consequences also include damage to our reputation or a loss of customer business, which could occur even if the negative impact on customers was de minimis. We also could face litigation or additional regulatory scrutiny. This in turn could lead to liability or other sanctions, including fines and penalties or reimbursement of adversely affected customers. Even if we do not suffer any material adverse consequences as a result of events affecting us directly, information systems issues at other financial institutions could lead to a general loss of customer confidence in financial institutions, including us. Also, system problems, including those resulting from third-party attacks, whether at PNC or at our competitors, may broadly increase legislative, regulatory and customer concerns regarding the functioning, safety and security of such systems. In that case, we would expect to incur even higher levels of costs with respect to prevention and mitigation of these risks.

We are vulnerable to the risk of third-party breaches of data security affecting the functioning of systems or the confidentiality of information, either at PNC or at third parties handling PNC information.

We are faced with ongoing, nearly continual, efforts by others to breach data security at financial institutions or with respect to financial transactions. Some of these involve efforts to enter our systems directly by going through or around our security protections. Others involve the use of social engineering schemes to gain access to confidential information from our employees, customers or vendors. Our risk and exposure to data security breaches is heightened because of our increased remote work environment, which results in more access points to our network. Most corporate and commercial transactions are now handled electronically, and our retail customers increasingly use online access as well as mobile and cloud technologies to bank with us. The ability to conduct business with us in this manner depends on the transmission and storage of confidential information in electronic form. As a result, efforts by bad actors to engage in various types of cyber attacks pose serious risks to our business and reputation. The same risks are presented by attacks potentially affecting information held by third parties on our behalf or accessed by third parties, including those offering financial applications, on behalf of our customers. These risks also arise to the extent that third parties with whom we do business are subject themselves to breaches and attacks, which may impact our systems.

In the ordinary course of business, we maintain and process vast amounts of information about us, our customers and our employees. This information tends to be confidential or proprietary and much of it is highly sensitive. Such highly sensitive information includes information sufficient to support identity theft and personal health information, as well as information regarding business plans and financial performance that has not been made public. One way in which bad actors attempt to harm us is by seeking access to some of this confidential or proprietary information, often with the intent of stealing from or defrauding us or our customers. In other cases, they seek to disrupt our ability to conduct our business, including by destroying or impairing our access to information maintained by us.

Our customers often use their own devices, such as computers, smartphones and tablets, to do business with us and may provide their PNC customer information (including passwords) to a third party in connection with obtaining services from that third party, including those offering financial applications. Although we take steps to provide safety and security for our customers' transactions with us and their customer information, to the extent they utilize their own devices or provide third parties access to their accounts, our ability to assure such safety and security is necessarily limited. These risks are heightened as we and others continue to expand mobile applications, cloud solutions, and other internet-based financial product offerings.

As our customers regularly use PNC-issued credit and debit cards to pay for transactions with retailers and other businesses, there is also the risk of data security breaches at those other businesses covering PNC account information. When our customers use PNC-issued cards to make purchases from those businesses, card account information often is provided to such businesses. If a business's systems that process or store card account information are subject to a data security breach, holders of our cards who have made purchases from that business may experience fraud on their card accounts. We can be responsible for reimbursing our customers for such fraudulent transactions on customers' card accounts, as well as for other costs related to data security compromise events, such as replacing cards associated with compromised card accounts. In addition, we provide card transaction processing services to some merchant customers under agreements we have with payment networks such as Visa and Mastercard. Under these agreements, we may be responsible for certain losses and penalties if one of our merchant customers suffers a data security breach. Moreover, to the extent more consumer confidential information becomes available to bad actors through the cumulative effect of data breaches at companies generally, bad actors may find it easier to use such information to gain access to our customer accounts.

Other cyber attacks are not focused on gaining access to credit card or user credential information, but instead seek access to a range of other types of confidential information, such as internal emails and other forms of customer financial information, and may use this information to support a ransomware attack. Ransomware attacks have sought to deny access to data and possibly shut down systems and devices maintained by target companies. In a ransomware attack, system data is encrypted or access is otherwise denied, accompanied by a demand for ransom to restore access to the data or to prevent public disclosure of confidential information.

A number of companies have fallen victim to business email compromise scams in recent years. Business email compromise scams involve using social engineering to cause employees to wire funds to the perpetrators in the mistaken belief that the requests were made by a company executive or established vendor. Attacks on our customers may put these relationships at risk, particularly if customers' ability to continue operations is impaired due to the losses suffered.

Other attacks in recent years have included distributed denial of service cyber attacks, in which individuals or organizations flood commercial websites with extraordinarily high volumes of traffic with the goal of disrupting the ability of commercial enterprises to process transactions and possibly making their websites unavailable to customers for extended periods of time. We (as well as other financial services companies) have been subject to such attacks. Recent cyber attacks have also included the insertion of malware into software updates and the infection of software while it is under assembly, known as a "supply chain attack."

The techniques used in cyber attacks change rapidly and frequently and are increasingly sophisticated, and we may not be able to anticipate cyber attacks or data security breaches.

In addition to threats from external sources, insider threats represent a significant risk to us. Insiders, including those having legitimate access to our systems and the information contained in them, have the easiest opportunity to make inappropriate use of the systems and information. Addressing that risk requires understanding not only how to protect us from unauthorized use and disclosure of data, but also how to engage behavioral analytics and other tools to identify potential internal threats before any damage is done. In addition, due to the increase in the number of employees who work remotely, the opportunity for insiders to grant access to third parties or to disclose confidential information of PNC or its customers has increased. As more work is conducted outside of PNC's facilities, the risk of improper access to PNC's network or confidential information has increased, including for reasons such as a failure by an employee or contractor to secure a device with PNC access.

We are and have been the target of some of these types of cyber attacks. To date, none of these types of cyber attacks has had a material impact on us. Nonetheless, we cannot entirely block efforts by bad actors to harm us, and there can be no assurance that future cyber attacks will not be material. While we maintain insurance coverage that may cover certain aspects of cyber risks, such insurance coverage may be insufficient to cover all losses. As a result, we could suffer material financial and reputational losses in the future from any of these or other types of attacks or the public perception that such an attack on our systems has been successful, whether or not this perception is correct. Attacks on others, some of which have led to serious adverse consequences, demonstrate the risks posed by new and evolving types of cyber attacks. Our ability to protect confidential or proprietary information is even more limited with respect to information held by third parties. We may suffer reputational damage or legal liability for unauthorized access to customer information held by third parties, even if we were in fact not responsible for preventing such access and had no reasonable way of preventing it.

We need effective programs to limit the risk of failures or breaches occurring in our information systems and to mitigate the impact when they do.

We have policies, procedures and systems (including cybersecurity and business continuity programs) designed to prevent or limit the effect of possible failures, interruptions or breaches in security of information systems. In recent years, we have devoted significant resources toward improving the reliability of our systems and their security against external and internal threats and expect to continue to do so in the future. We design our business continuity and other information and technology risk management programs to manage our capabilities to provide services in the case of an event resulting in material disruptions of business activities affecting our employees, facilities, technology or suppliers. We cannot guarantee the effectiveness of our policies, procedures and systems to protect us in any future situation, nor the effectiveness of our oversight of risk at third parties. Although we have policies, procedures and systems designed to mitigate third-party risk, our ability to implement policies, procedures and systems designed to prevent or limit the effect of possible failures, interruptions or breaches in security of information systems with respect to third-party systems and the financial services industry infrastructure is necessarily limited. Should an adverse event affecting another company's systems occur, we may not have financial protection from the other company sufficient to compensate us or otherwise protect us from the consequences.

Methods used by others to attack information systems change frequently (with generally increasing sophistication). A new method of attack often is not recognized until launched against a target. Attacks in some cases appear to be supported by foreign governments or other well-financed entities and often originate from less regulated and remote areas around the world. As a result, we may be unable to implement adequate preventive measures to address these methods in advance of attacks.

Even with our proactive and defensive measures in place, adverse events are likely to occur, and there remains the risk that one or more such events would be material to PNC. Our ability to mitigate the adverse consequences of such occurrences is in part dependent on the quality of our business continuity planning, our ability to understand threats to us from a holistic perspective, and our ability to anticipate the timing and nature of any such event that occurs, with novel or unusual events posing a greater risk. It is also the case that an adverse event may go undetected for a period of time, with the adverse consequences likely greater the longer it takes to discover the problem. In many cases, it also depends on the preparedness and responses of national or regional governments, including emergency responders, or on the part of other organizations and businesses with which we deal. Additionally, our failure to communicate cyber incidents appropriately to relevant parties could result in regulatory, legal, operational and reputational risk.

Risks Related to the Business of Banking

Our business and financial results are subject to risks associated with the creditworthiness of our customers and counterparties.

Credit risk is inherent in the financial services business. It results from, among other things, extending credit to customers, purchasing securities, and entering into financial derivative transactions and certain guarantee contracts. Credit risk is one of our most significant risks, particularly given the high percentage of our assets represented directly or indirectly by loans and securities and the importance of lending activity to our overall business. We manage credit risk by assessing and monitoring the creditworthiness of our customers and counterparties, by diversifying our loan portfolio, by obtaining and monitoring collateral for certain exposures and by investing primarily in high quality securities.

A borrower's ability to repay a loan can be adversely affected by many factors. Individual borrowers can be affected, for example, by declines in income, job losses, health issues or family issues. Commercial borrowers can be affected, for example, by poor business performance, changes in customer behavior or catastrophic losses. Weakness in the economy or in financial markets would typically adversely impact the ability of our borrowers to repay outstanding loans. We are exposed to increased credit risk if we fail to evaluate properly at origination the likely ability of a borrower to repay a loan. Properly estimating the current and potential value of any collateral pledged to support the loan also is critical to effectively managing credit risk. A failure to identify declining creditworthiness of a borrower or declining collateral value at a time when remedial actions could reduce our exposure also increases credit risk. Any decrease in our borrowers' ability to repay loans likely would result in higher levels of nonperforming loans, net charge-offs, provision for credit losses and valuation adjustments on loans held for sale. Managing credit risk effectively also relies on forecasts of future overall economic conditions, which are inherently imperfect.

In addition to credit risk associated with our lending activities, we have credit risk arising from many other types of business relationships. Routine transactions give us credit exposure to brokers and dealers, commercial banks, investment banks, mutual and hedge funds, other institutional clients, as well as vendors and other non-financial entities.

Our credit risk may be exacerbated when the value of collateral held by us to secure obligations to us cannot be realized, including because of legal or regulatory changes, or is liquidated at prices that are not sufficient to recover the full amount of the loan or derivative exposure due to us. In addition, credit risk may be exacerbated when counterparties are unable to post collateral, whether for operational or other reasons.

We reserve for credit losses on our loan and lease portfolio through our ACL estimated under CECL. Under CECL, the ACL reflects expected lifetime losses, which has led and could continue to lead to volatility in the allowance and the provision for credit losses as economic forecasts, actual credit performance and other factors used in the loss estimating process change. We also have reserves for unfunded loan commitments and letters of credit. Changes to expected losses are reflected in net income through provision for credit losses. A worsening of economic conditions or our economic outlook or an increase in credit risk, particularly following a period of good economic conditions, would likely lead to an increase in provision for credit losses with a resulting reduction in our net income and an increase to our allowance. Conversely, an improvement of economic conditions or our economic outlook, particularly following a period of poor economic conditions, could result in a recapture of provision for credit losses for a period of time with a resulting increase in our net income and decrease in our allowance that is not likely to be sustained and that may obscure actual current operations and financial performance.

The concentration and mix of our assets could increase the potential for significant credit losses.

In the ordinary course of business, we often have heightened credit exposure to a particular industry, geography, asset class or financial market. As an example, loans secured by commercial and residential real estate typically represent a significant percentage of our overall credit portfolio. They also represent a portion of the assets underlying our investment securities. Although there are limitations on the extent of total exposure to an individual consumer or business borrower, events adversely affecting specific customers or counterparties, industries, geographies, asset classes or financial markets, including a decline in their creditworthiness or a worsening overall risk profile, could materially and adversely affect us. For example, any downturn in the condition of the U.S. housing market could result in significant write-downs of asset values tied to residential real estate. Declining economic conditions also may impact commercial borrowers more than consumer borrowers, or vice versa. In addition, we execute transactions with counterparties in the financial services industries. Financial services institutions are interrelated because of trading, funding, clearing or other relationships. As a result, uncertainty about the stability of other financial services institutions could lead to market-wide losses and defaults. Thus, the concentration and mix of our assets may affect the severity of the impact of recessions or other economic downturns on us.

Our business and financial performance are impacted significantly by market interest rates and movements in those rates.

As a result of the high percentage of our assets and liabilities that are in the form of interest-bearing or interest-related instruments, changes in interest rates, in the shape of the yield curve, or in spreads between different market interest rates can have a material effect on our business, our profitability and the value of our financial assets and liabilities. For example:

- Changes in interest rates or interest rate spreads affect the difference between the interest that we earn on assets such as loans and investment securities and the interest that we pay on liabilities such as deposits and borrowings, which impacts our overall net interest income and margin as well as our profitability.
- Such changes can affect the ability of borrowers to meet obligations under variable or adjustable rate loans and other debt instruments and can, in turn, increase our credit losses on those assets.
- Such changes can decrease the demand for interest rate-based products and services, including loans and deposit accounts.
- Such changes affect our hedging of various forms of market and interest rate risk and may decrease the effectiveness of those hedges in helping to manage such risks.
- Movements in interest rates also affect loan prepayment speeds and could result in impairments of mortgage servicing assets or otherwise affect the profitability of such assets.
- Increases in interest rates likely lower the price we would receive on fixed-rate customer obligations if we were to sell them.

The rates on some interest-bearing instruments adjust promptly in accordance with changes in market rates, while others adjust only periodically or are fixed throughout a defined term. As a result, the impact of changes in interest rates can be either increased or diluted due to differences in the relative variability of the rates paid on our liabilities in relation to the rates received on our assets. The extent to which we have elected to hedge interest rate risk through interest rate swaps also affects the impact of rate changes. We attempt to manage the balance sheet to increase our benefit or reduce negative impacts from future movements in interest rates, but failures to anticipate actual movements may have the opposite result. In addition, we do not generally hedge all of our risk and the fact that we attempt to hedge any risk does not mean we will be successful.

While higher interest rates generally enhance our ability to grow our net interest income, there are risks associated with a rising interest rate environment. As a general matter, increasing rates tend to decrease the value of fixed-rate financial instruments held on our balance sheet, as discussed in the Risk Factor headed "Our business and financial performance are vulnerable to the impact of changes in the values of financial assets." Also, customers may be less willing or able overall to borrow at higher rates. Higher interest rates may indirectly affect the value of asset classes such as real estate typically financed through secured loans, with a resulting negative effect on collateral securing such loans. As another example, there may be increased competitive pressures as rates on deposit products rise. The benefits of higher interest rates are best achieved if we can increase the rates on loans and other assets faster than the rates on deposits and other liabilities increase. We may not be able to achieve this result in a rising rate environment.

On the other hand, lower interest rates tend to have a negative impact on our net interest margin, and, unless offset by higher earning assets, on our net interest income. Moreover, a negative interest rate environment, in which interest rates drop below zero either broadly or for some types of instruments, 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 Federal Reserve Bank. In addition, our systems may not be able to handle adequately a negative interest rate environment and not all variable rate instruments are designed for such a circumstance.

We discuss the impact of governmental monetary policy on interest rates in the Risk Factor headed "The policies of the Federal Reserve and other governmental agencies have a significant impact on interest rates and overall financial market performance, which are important to our business and financial performance."

Our business and financial performance are vulnerable to the impact of changes in the values of financial assets.

As a financial institution, a substantial majority of our assets and liabilities are financial in nature. Examples include loans, securities, servicing rights, deposits and borrowings. Such assets and liabilities will fluctuate in value, often significantly, due to movements in the financial markets or market volatility as well as developments specific to the asset or liability in question. The underlying value of assets under lease or securing an obligation generally decreases due to increases in supply or decreases in demand for the asset or deterioration in the condition of the asset. This could negatively impact the ability to collect fully on the secured obligation. Credit-based assets and liabilities will fluctuate in value due to changes in the perceived creditworthiness of borrowers or other counterparties and due to changes in market interest rates.

In many cases, we mark our assets and liabilities to market and recognize such changes either through net income or OCI. Thus, gains or losses on these assets and liabilities can have a direct impact on our results of operations and financial performance, unless we have effectively hedged our exposures. We may need to record losses in the value of financial assets even where our expectation of realizing the face value of the underlying instrument has not changed. Our remaining assets and liabilities are not marked to market. As a result, our balance sheet does not precisely represent the fair market value of our financial assets and liabilities.

In addition, asset management revenue is earned primarily based on a percentage of the value of the assets being managed and thus is impacted by general changes in market valuations. Thus, although we are not directly impacted by changes in the value of such assets, decreases in the value of those assets would affect related noninterest income.

Risks Related to Estimates and Assumptions

Our asset and liability valuations and the determination of the amount of loss allowances and impairments taken on our assets are highly subjective. Our estimates could materially impact our results of operations or financial position.

Our accounting policies are key to how we report our financial condition and results of operations. We must exercise judgment in selecting and applying many of these policies and methods to comply with GAAP and reflect management's judgment regarding the most appropriate manner to report PNC's financial condition and results of operations. Management's selection of a particular accounting policy to apply, while reasonable and appropriate, could result in PNC reporting different results than would have been reported under a different alternative. In addition, the Financial Accounting Standards Board, SEC and other regulatory agencies may issue new or amend existing accounting and reporting standards or change existing interpretations of those standards that could materially affect our financial statements. In some cases, PNC may be required to retrospectively apply a new or amended standard resulting in changes to previously reported financial results.

Certain accounting policies require that we use estimates, assumptions and judgments in preparing our financial statements, including in determining credit loss reserves, reserves related to legal proceedings and the fair value of certain assets and liabilities, among other items. These policies require management to make difficult, subjective and complex judgments about matters that are inherently uncertain, and different amounts could be reported under different conditions or using different assumptions. For example, CECL requires us to make difficult, subjective and complex judgments about economic and market conditions in determining the ACL.

Some of our financial instruments, including certain derivatives, debt securities, loans, MSRs and private equity investments, among other items, require a determination of their fair value for our financial statements. Assets and liabilities carried at fair value inherently result in a higher degree of financial statement volatility. Changes in underlying factors or assumptions in any of the areas underlying our estimates could materially impact our future financial condition and results of operations. During periods of market disruption, it would be difficult to value certain assets if trading becomes less frequent and/or market data becomes less observable. There may be certain asset classes that were historically traded in active markets with significant observable data that rapidly become illiquid due to market volatility, a loss in market confidence or other factors. In addition, we have assets and liabilities carried at fair value that are estimated using unobservable inputs that are significant to the fair value of the assets or liabilities. The valuation of any asset or liability substantially based on unobservable inputs is necessarily less reliable than those based on active trading markets. Further, rapidly changing and unprecedented market conditions could materially impact the valuation of assets as reported within our consolidated financial statements. Our ability to hedge exposure is in part dependent on our ability to value the related assets or liabilities.

The determination of the amount of loss allowances and asset impairments varies by asset type and is based upon our periodic evaluation and assessment of known and inherent risks associated with the respective asset class. Management updates its evaluations regularly and reflects changes in allowances and impairments in operations as such evaluations are revised. Although we have policies and procedures in place to determine loss allowance and asset impairments, due to the subjective nature of this area, the level of impairments taken, and allowances reflected in our financial statements may not accurately reflect the actual level of risk and the amount of future losses.

There are risks resulting from the extensive use of models in our business.

We rely on models to measure risks and to estimate many financial values. We use models throughout many areas of our business, relying on them to inform decision making. Examples of areas where we use models include determining the pricing of various products, identifying potentially fraudulent transactions, grading loans and extending credit, measuring interest rate and other market risks, predicting or estimating losses, and assessing capital adequacy. We depend significantly on models for credit loss accounting under CECL, capital stress testing and estimating the value of items in our financial statements.

Models generally predict or infer certain financial outcomes, leveraging historical data and assumptions as to the future, often with respect to macroeconomic conditions. Development and implementation of some of these models, such as the models for credit loss accounting under CECL, require us to make difficult, subjective and complex judgments. Poorly designed or implemented models, including in the choice of relevant historical data or forward-looking assumptions, present the risk that our business decisions based on information incorporating model output will be adversely affected due to the inadequacy of that information. For example, our models may not be effective if historical data does not accurately represent future events or environments or if our models rely on erroneous data, formulas, algorithms or assumptions and our internal model review processes fail to detect and address these flaws.

Models, if flawed, could cause information we provide to the public or to our regulators to be inaccurate or misleading. Some of the decisions that our regulators make, including those related to capital distribution to our shareholders, would likely be affected adversely if they perceive that the quality of the relevant models we use is insufficient. Finally, flaws in our models that negatively impact our customers or our ability to comply with applicable laws and regulations could negatively affect our reputation or result in fines and penalties from our regulators.

Risks Related to Our Need for Customers

Our success depends on our ability to attract and retain customers for our products and services.

Our performance is subject to risks associated with declines in customer demand for our products and services. As a result of the nature of those products and services, we are particularly at risk for losses of economic confidence or customer trust in us.

Economic and market developments may affect consumer and business confidence levels. If customers lose confidence due to concerns regarding the economy, the demand for our products and services could suffer. If we fail to attract and retain customers, demand for our loans and other financial products and services could decrease, and we could experience adverse changes in payment patterns. We could lose interest income from a decline in credit usage and noninterest income from a decline in product sales, investments and other transactions.

Our ability to attract and retain customer deposits is impacted by the levels of interest rates, as customers balance the benefits of bank accounts such as deposit insurance and some of the convenience associated with more traditional banking products against the possibility of higher yields from other investments. In general, if the spread between the rates we offer and those offered by alternatives to bank accounts widens, customers are often willing to forego the benefits of bank accounts (such as FDIC insurance) for higher returns elsewhere. Our customers could remove money from checking, savings or other types of deposit accounts with us in favor of other banks or other types of cash management products. In such circumstances, we would need either to increase rates to levels that are seen as competitive or lose customers, in either case with a negative impact to net interest income. In addition, deposits are a low-cost source of funds for us. Therefore, losing deposits could increase our funding costs and reduce our net interest income. Loss of customers could also harm noninterest income by decreasing fee-bearing transaction volume. In addition, when rates are higher, customers tend to shift deposits from noninterest-bearing accounts to interest-bearing ones, thereby negatively impacting net interest income.

Our customers increasingly use third-party financial applications that are expected to interface with their PNC accounts. This use leads to the risk that issues with respect to the effective functioning of that interface, regardless of cause, could result in a loss of customers as they seek banking relationships that work better with these other applications.

News or other publicity that harms our reputation, or harms the reputation of our industry generally, also could cause a loss of customers or a reduction in the extent to which customers do business with us. This is described further in the Risk Factor headed "We are at risk for an adverse impact on our business due to damage to our reputation."

In our asset management business, investment performance is an important factor influencing the level of assets that we manage. Poor investment advice or performance could hurt revenue and growth as existing clients might withdraw funds in favor of better performing products. Additionally, the ability to attract funds from existing and new clients might diminish. Overall economic conditions may limit the amount that customers are able or willing to invest as well as the value of the assets they do invest. The failure or negative performance of products of other financial institutions could lead to a loss of confidence in similar products offered by us without regard to the performance of our products. Such a negative contagion could lead to withdrawals, redemptions and liquidity issues in such products and have an adverse impact on our assets under management and asset management revenues and earnings.

We are at risk for an adverse impact on our business due to damage to our reputation.

Our ability to compete effectively, to attract and retain customers and employees, and to grow our business is dependent on maintaining our reputation and having the trust of our customers, employees, the communities that we serve and other stakeholders. Many types of developments, if publicized, can negatively impact a company's reputation with adverse consequences to its business.

Financial services companies are highly vulnerable to reputational damage when they are found to have harmed customers, particularly retail customers, through conduct that is seen as illegal, unfair, deceptive, abusive, manipulative or otherwise wrongful. There also may be reputational damage from human error or systems failures viewed as having harmed customers without involving misconduct, including service disruptions or negative perceptions regarding our ability to maintain the security of our technology systems and protect client data. For example, we may suffer reputational harm to the extent that we are unable to successfully detect, prevent and remedy fraud that harms our clients. Our reputation may also be harmed by failing to deliver products and services of the quality expected by our customers and support the communities that we serve. In addition, our reputation may be harmed as a result of our participation in certain programs, such as the PPP and the processing of unemployment benefits during the COVID-19 pandemic, that has exposed and may continue to expose us to increased scrutiny and criticism. The reputational impact is likely greater to the extent that the bad conduct, errors or failures are pervasive, long-standing or affect a significant number of customers, particularly retail consumers. The negative impact of such reputational damage on our business may be disproportionate to the actual harm caused to customers. It may be severe even if we fully remediate any harm suffered by our customers. Furthermore, because we conduct most of our businesses under the "PNC" brand, negative public opinion about one business could also affect our other businesses. In addition, we could suffer reputational harm and a loss of customer trust as a result of the conduct of others in our industry even if we have not engaged in such conduct. We use third parties to help in many aspects of our business, with the risk that their conduct can affect our reputation regardless of the degree to which we are responsible for it.

To an increasing extent, financial services companies, including PNC, are facing criticism with accompanying reputational risk from social and environmental activists, and from investors and other stakeholders who believe companies should be focusing more or less on environmental, social and governance matters. Companies in our industry, including PNC, are targeted for engaging in business with specific customers or with customers in particular industries, where the customers' activities, even if legal, are perceived as having harmful impacts on matters such as the environment, consumer health and safety, or society at large. In addition, activists, investors and other stakeholders of companies in our industry, including PNC, are seeking increased transparency and action with respect to environmental, social and governance activities, political activities and activities that are or may be perceived to be politically partisan in nature. Criticism has come in many forms, including protests at PNC facilities and social media campaigns. PNC and many other financial services companies have in recent years been criticized for financing companies engaged in, for example, extraction and distribution of fossil fuels, manufacture of nuclear and other weapons (including personal firearms), private prisons and border control activities. In contrast, state laws affecting our industry have been proposed and, in some cases, enacted reflecting opposite approaches. For example, to conduct most business with a municipality in Texas, PNC must certify, among other things, that it does not discriminate against the firearms industry or the fossil fuel industry. Many of these issues are divisive without broad agreement as to the appropriate steps a company such as PNC should take. As a result, however we respond to such criticism, we expose ourselves to the risks that current or potential customers decline to do business with us or current or potential employees refuse to work for us. This can be true regardless of whether we are perceived by some as not having done enough to address these concerns or by others as having inappropriately yielded to these pressures. These pressures can also be a factor in decisions as to which business opportunities and customers we pursue, potentially resulting in foregone profit opportunities.

The speed with which information moves through social media and other news sources on the internet means that negative information about PNC can rapidly have a broadly adverse impact on our reputation. This is true whether or not the information is accurate. False information can also be spread from unaffiliated or parody social media accounts pretending to be official company communications channels. Once information has gone viral, it can be difficult to counter it effectively, either by correcting inaccuracies or communicating remedial steps taken for actual issues. The potential impact of negative information going viral means that material reputational harm can result from a single discrete or isolated incident.

We are also subject to the risk of reputational harm resulting from conduct of persons identified as our employees but acting outside of the scope of their employment, including through their misconduct, unethical behavior, or activities on personal social media.

We operate in a highly competitive environment in terms of the products and services we offer and the geographic markets in which we conduct business.

We are subject to intense competition both from other financial institutions and from non-bank entities, including financial technology companies (often referred to as "FinTech"). In many cases, non-bank entities can engage in many activities similar to ours or offer products and services desirable to our customers without being subject to the same types of regulation, supervision and restrictions that are applicable to banks, which could place us at a competitive disadvantage. Emerging financial technologies, including with respect to payment services and systems, lending, digital wallets, non-fungible tokens and digital currencies and cryptocurrencies, may affect our customers' needs and expectations for products and services. We may fail to attract or retain customers if we are unable to develop and market products and services that meet evolving customer needs or demands or if we are unable to deliver them effectively and securely to our customers. We may also fail to attract or retain customers if we are unwilling to provide products or services that we deem to be speculative or risky. The competition we face is described in Item 1 of this Report under "Competition."

Consolidation in our industry, including among smaller banks combining to form more competitive larger ones and between banks and non-bank entities, could result in PNC facing more intense competition, particularly in impacted regions or with respect to particular products. As we expand into new markets, we may face competitors with more experience and established relationships in these markets, which could adversely affect our ability to compete.

A failure to adequately address the competitive pressures we face could make it harder for us to attract and retain customers across our businesses. On the other hand, meeting these competitive pressures could require us to incur significant additional expense or to accept risk beyond what we would otherwise view as desirable under the circumstances. In addition, in our interest rate sensitive businesses, competitive pressures to increase rates on deposits or decrease rates on loans could reduce our net interest margin, negatively impacting our net interest income.

We depend on skilled labor, and employee attrition, competition for talented employees and labor shortages may have a material adverse effect on our business and operations.

Our performance is dependent on attracting and retaining talented and diverse employees. We face significant competition for these employees across many of our businesses and support areas. This presents greater risk as we expand into new markets, develop new product lines, or enhance staffing in certain areas, particularly technology. This competition leads to increased expenses in affected business areas. In addition, changes to the labor market as a result of the COVID-19 pandemic (including elevated employee attrition, labor availability and wage inflation) have exacerbated and may continue to exacerbate the challenges of attracting and retaining talented and diverse employees. Differences in demands, expectations and priorities of the workforce (such as remote work expectations) may require us to modify our recruiting and retention strategies to attract and retain employees. Limitations on the way regulated financial institutions can compensate their officers and employees, including those contained in pending rule proposals implementing requirements of Dodd-Frank, may make it more difficult for regulated financial institutions, including PNC, to compete with unregulated companies for talent.

Risks Related to Other Operational Issues

We depend on the effectiveness and integrity of employees, and the systems and controls for which they are responsible, to manage operational risks.

We are a large company that offers a wide variety of products and services to a broad and diverse group of customers. We rely on our employees to design, manage and operate our systems and controls to assure that we properly enter into, record and manage processes, transactions and other relationships with customers, suppliers and other parties with whom we do business. In some cases, we rely on employees of third parties to perform these tasks. We also depend on employees and the systems and controls for which they are responsible to assure that we identify and mitigate the risks that are inherent in our relationships and activities. These concerns are increased when we change processes or procedures, introduce new products or services, acquire or invest in a business or implement new technologies, as we may fail to adequately identify or manage operational risks resulting from such changes. These concerns may be further exacerbated by employee turnover and labor shortages.

As a result of our necessary reliance on employees, whether ours or those of third parties, to perform these tasks and manage resulting risks, we are thus subject to human vulnerabilities. These range from innocent human error to misconduct or malfeasance, potentially leading to operational breakdowns or other failures. Our controls may not be adequate to prevent problems resulting from human involvement in our business, including risks associated with the design, operation and monitoring of automated systems. We may also fail to adequately develop a culture of risk management among our employees.

Errors by our employees or others responsible for systems and controls on which we depend and any resulting failures of those systems and controls to prevent unethical, fraudulent, improper or illegal conduct could result in significant harm to PNC. This harm could include customer remediation costs, regulatory fines or penalties, litigation or enforcement actions or limitations on our business activities. We could also suffer damage to our reputation, as described under "We are at risk for an adverse impact on our business due to damage to our reputation."

We use automation, machine learning, artificial intelligence and robotic process automation tools to help reduce some risks of human error. Nonetheless, we continue to rely on many manual processes to conduct our business and manage our risks. In addition, use of automation tools does not eliminate the need for effective design and monitoring of their operation to make sure they operate as intended. Enhanced use of automation may present its own risks. Automated systems may themselves experience outages or problems. Some tools are dependent on the quality of the data used by the tool to learn and enhance the process for which it is responsible. Not only bad or missing data but also anomalous data can adversely affect the functioning of such tools. It is possible that humans in some cases are better able than highly automated tools to identify that anomalous data is being used or that results are themselves anomalous.

We rely on third-party vendors, service providers and other counterparties to help support many aspects of our business. When we do so, our direct control of activities related to our business is reduced, which could introduce risk.

Our use of third parties to support our business needs typically means that we do not directly control the activities we are having them perform. Any disruption in services provided by these third parties could adversely affect our ability to conduct our business. Replacing third parties could also entail significant delay and expense. Risks can arise through inadequate performance by a third party (including by its downstream service providers), specifically where that performance could affect us or our customers, and even when the result of factors or events are beyond such third party's control. Many of the kinds of risks presented by activities performed by third parties are described elsewhere in these Risk Factors. For example, we use outside companies to assist us in processing some confidential customer or employee information. In such a case, a cyber attack on such a company may result in access to our customers' or employees' information. We are also vulnerable, including to regulatory penalties, if an outside company fails to comply with legal requirements relevant to its work on our behalf. We may in any such circumstance suffer financial losses, legal consequences and injury to our reputation. Even if the other company makes us whole for financial losses, which is not necessarily the case, it is unlikely that it would be able to restore any injury to our reputation. As a result, the use of third parties to assist in our business activities heightens the risks to us inherent in those activities.

Other Key Risks

We are at risk for the impact of adverse results in legal proceedings.

Many aspects of our business involve substantial risk of legal liability. We have been named or threatened to be named as defendants in various lawsuits arising from our business activities. In addition, we are regularly the subject of governmental investigations and other forms of regulatory inquiry. We also are at risk when we have agreed to indemnify others for losses related to legal proceedings they face, such as in connection with the sale of a business or assets by us. The results of these legal proceedings could lead to significant monetary damages or penalties, restrictions on the way in which we conduct our business or reputational harm. Although we establish accruals for legal proceedings when information related to the loss contingencies represented by those matters indicates both that a loss is probable and that the amount of loss can be reasonably estimated, we do not have accruals for all legal proceedings where we face a risk of loss. In addition, due to the inherent subjectivity of the assessments and unpredictability of the outcome of legal proceedings, amounts accrued often do not represent the ultimate loss to us from the legal proceedings in question. Thus, our ultimate future losses may be higher, and possibly significantly so, than the amounts accrued for legal loss contingencies. We discuss further the unpredictability of legal proceedings and describe certain of our pending legal proceedings in Note 21 Legal Proceedings.

We grow our business in part by acquiring other financial services businesses from time to time. Sometimes these are businesses with technologies or other assets valuable to us even if they do not themselves provide financial services to customers. These acquisitions present a number of risks and uncertainties related both to the acquisition transactions themselves and to the integration of the acquired businesses into PNC after closing.

Acquisitions of other companies or of financial assets and deposits and other liabilities present risks and uncertainties to us in addition to those presented by the nature of the business acquired. Many of the same risks arise when we engage in strategic partnerships.

Specific factors that can affect the ultimate results from acquisitions include, depending on the nature of the business acquired, the following:

- Diligence risk: Our ability to analyze the risks presented by prospective acquisitions, as well as our ability to prepare in advance of closing for integration, depends, in part, on the information we can gather with respect to the business we are acquiring. We may not have access to all of the information that would be desirable. Our pre-acquisition review of the business also impacts our ability to prepare for and execute on the integration of an acquired business.
- Accuracy of assumptions: We make certain assumptions related to an acquisition that may prove to be inaccurate. Anticipated benefits (such as cost savings from synergies or strategic gains from being able to offer enhanced product sets) may take longer or require greater resources to achieve or may not be achieved in their entirety. Acquisitions also may be substantially more expensive or take longer to complete than anticipated. We may also incur unanticipated costs in connection with the integration of an acquired business.
- Regulatory approval: Completing attractive acquisition opportunities generally requires various governmental and regulatory approvals and consents prior to closing. These authorities have broad discretion, and regulatory approvals could be delayed, restrictively conditioned or denied, including due to regulatory issues we (or the target company) have, or may have, under any of the numerous governmental regulations to which we (or it) are subject. Moreover, as a condition to approval, governmental authorities may impose requirements, require divestitures or place restrictions on the conduct of the business of the combined company, which could limit the benefits of the acquisition or result in delay or the failure to close the acquisition. Significant acquisitions by large banks also often attract public scrutiny, which may result in negative publicity that adversely affects our reputation. Our ability to make large acquisitions may be limited by the regulatory agencies responsible for reviewing or approving the transaction, changes in regulatory rules or standards or the application of those rules or standards, or future regulatory initiatives designed to limit systemic risk and the potential for a financial institution to become "too big to fail."
- Pre-closing risk: Prospective acquisition targets are also subject to their own risks that we cannot manage or control prior to closing. As a result, our business, financial condition, results of operations and cash flows could be adversely affected after closing to the extent that any such risks result in non-indemnified losses for which we are responsible.
- Target-specific risk: Acquisition targets have their own risks specific to their businesses that could impact the success of a transaction.
- If a significant aspect of the value of transaction is intellectual property, the extent to which the intellectual property may be utilized or protected and commercialized by PNC.
- If the acquisition includes loan portfolios, the extent of actual credit losses and the required allowance for credit losses following completion of the acquisition.
- If the acquisition involves entering into new businesses or geographic or other markets, potential limitations on our ability to take advantage of these opportunities because of our inexperience with respect to them.
- The results of litigation and governmental investigations that may be pending at the time of the acquisition or that may be filed or commenced thereafter, because of an acquisition or otherwise. It is often hard to predict the results of such legal proceedings. It may also be hard to anticipate what legal proceedings may be started following an acquisition based on the prior activities of the acquired company (and its predecessors).
- If the acquired company depends on models for, among other things, capital planning and credit loss accounting, we may have to rely on the acquired company's models post-closing prior to integrating the acquired company's data into PNC's models. These models may be designed or implemented in a manner different than the models used by PNC. As a result, incorporation of the acquired company's data into our models could materially impact our results of operations or financial position to the extent that our estimates based on the acquired company's models prove to be inaccurate.
- The acquired company may operate under enterprise risk management systems, policies and procedures that are different and less mature than those of PNC, and we may need to rely on the acquired company's enterprise risk management systems, policies and procedures for a period of time after acquisition, which might limit PNC's ability to identify, monitor, manage and report risks. The acquired company may also implement its policies and procedures in a different manner than PNC would, which may result in heightened regulatory, legal, operational or reputational risk.
- Retention risk: The success of an acquisition generally is at least partially dependent on our ability to retain and expand upon the acquired company's customer base. It is also frequently subject to risks related to human capital, including, to the extent being retained, the quality of leadership of the acquired company.
- Integration risk: Successful integration of an acquired company may present challenges due to differences in policies, procedures and systems, the level of details or comprehensiveness of an acquired company's financial and business information and data, and corporate culture. Integration challenges could also result in damage to our reputation, as described under "We are at risk for an adverse impact on our business due to damage to our reputation."

Our business and financial performance could be adversely affected, directly or indirectly, by disasters, natural or otherwise, by terrorist activities, by international hostilities or by domestic civil unrest.

Neither the occurrence nor the potential impact of natural and other disasters (including severe weather events), health emergencies, dislocations, geopolitical instabilities, terrorist activities, international hostilities or other extraordinary events beyond PNC's control can be predicted. However, these occurrences could adversely impact us, for example, by causing significant damage to our facilities or preventing us from conducting our business in the ordinary course. Also, their impact on our borrowers, depositors, other customers, suppliers or other counterparties could result in indirect adverse effects on us. Other indirect adverse consequences from these occurrences could result from impacts to the financial markets, the economy in general or in any region, or key parts of the infrastructure (such as the power grid) on which we and our customers rely. These types of indirect effects, whether specific to our counterparties or more generally applicable, could lead, for example, to an increase in delinquencies, bankruptcies or defaults that could result in PNC experiencing higher levels of nonperforming assets, net charge-offs and provisions for credit losses. They could also cause a reduction in demand for lending or other services that we provide.

Our ability to mitigate the adverse consequences of such occurrences is in part dependent on the quality of our resiliency planning. This includes our ability to anticipate the nature of any such event that might occur. The adverse impact of these occurrences also could be increased to the extent that there is a lack of preparedness on the part of national or regional emergency responders or on the part of other organizations and businesses that we deal with, many of which we depend on but have limited or no control over.

ITEM 1B – UNRESOLVED STAFF COMMENTS

There are no SEC staff comments regarding PNC's periodic or current reports under the Exchange Act that are pending resolution.

ITEM 2 – PROPERTIES

Our executive and primary administrative offices are currently located at The Tower at PNC Plaza, Pittsburgh, Pennsylvania. The 33-story structure is owned by PNC Bank, National Association.

We own or lease numerous other premises for use in conducting business activities, including operations centers, offices, and branches and other facilities. We consider the facilities owned or occupied under lease by our subsidiaries to be adequate for the purposes of our business operations. We include here by reference the additional information regarding our properties in Note 7 Leases and Note 8 Premises, Equipment and Leasehold Improvements.

ITEM 3 – LEGAL PROCEEDINGS

See the information set forth in Note 21 Legal Proceedings, which is incorporated here by reference.

ITEM 4 – MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

Information regarding each of our executive officers as of February 20, 2023 is set forth below. Executive officers do not have a stated term of office. Each executive officer has held the position or positions indicated or another executive position with the same entity or one of its affiliates for the past five years unless otherwise indicated below.

Name	Age	Position with PNC	Year Employed (a)
Carole L. Brown	58	Executive Vice President and Head of Asset Management Group	2019
Richard K. Bynum	52	Executive Vice President and Chief Corporate Responsibility Officer	2005
William S. Demchak	60	Chairman, President and Chief Executive Officer (b)	2002
Kieran J. Fallon	56	Executive Vice President and Chief Risk Officer	2011
Deborah Guild	54	Executive Vice President, Chief Information Security Officer and Head of Enterprise Technology	2013
Michael J. Hannon	66	Executive Vice President and Chief Credit Officer	1982
Vicki C. Henn	54	Executive Vice President and Chief Human Resources Officer	1994
Gregory B. Jordan	63	Executive Vice President, General Counsel, Chief Administrative Officer and Head of Regulatory and Government Affairs	2013
Stacy M. Juchno	47	Executive Vice President and General Auditor	2009
Ganesh Krishnan	47	Executive Vice President and Enterprise Chief Information Officer	2008
Michael P. Lyons	52	Executive Vice President and Head of Corporate & Institutional Banking	2011
Alexander E. C. Overstrom	39	Executive Vice President and Head of Retail Banking	2014
E William Parsley, III	57	Executive Vice President and Chief Operating Officer	2003
Robert Q. Reilly	58	Executive Vice President and Chief Financial Officer	1987
Gregory H. Kozich	59	Senior Vice President and Controller	2010

(a) Where applicable, refers to year employed by predecessor company.
(b) Mr. Demchak also serves as a director. Biographical information for Mr. Demchak is included in "Election of Directors (Item 1)" in our proxy statement to be filed for the 2023 annual meeting of shareholders. See Item 10 of this Report.

Carole L. Brown was appointed Executive Vice President and Head of Asset Management Group in July 2020. Previously, she was the Chief Change and Risk Officer for PNC's Asset Management Group and Corporate & Institutional Banking businesses. Prior to joining PNC in 2019, she served as chief financial officer for the City of Chicago from May 2015 to May 2019. Prior to her work for the City of Chicago, Ms. Brown had a more than 25-year career as a municipal finance investment banker.

Richard K. Bynum was appointed Executive Vice President and Chief Corporate Responsibility Officer in July 2020. Prior to his appointment, he served as regional president for PNC's Greater Washington market from 2017 to 2020. He previously served as a member of PNC's retail executive leadership team, where he led the Business Banking division. Prior to that, he served as the Greater Washington retail market executive from 2010 to 2014.

Kieran J. Fallon was appointed Executive Vice President and Chief Risk Officer in February 2021. Prior to his appointment, he served as PNC's Senior Deputy General Counsel with legal oversight responsibility for PNC's government, regulatory affairs and enterprise risk, and as PNC's primary liaison with PNC's regulatory bodies. Previously, he served as PNC's chief counsel of Regulatory Affairs and briefly as acting general counsel. Prior to joining PNC in 2011, Mr. Fallon served as associate general counsel for legislation and special projects with the Board of Governors of the Federal Reserve System in Washington, D.C.

Deborah Guild was appointed Executive Vice President, Chief Information Security Officer and Head of Enterprise Technology in November 2020. Prior to her appointment, she was PNC's Chief Security Officer, and previously served as PNC's Chief Technology Officer. Prior to joining PNC in October 2013, Ms. Guild spent 21 years at Bank of America where she most recently served as Chief Technology Officer of Enterprise Functions and End User Computing.

Michael J. Hannon has served as Executive Vice President since 2009, prior to which he was a Senior Vice President. He has served as Chief Credit Officer since 2001 and was Interim Chief Risk Officer from December 2011 to February 2012.

Vicki C. Henn has served as Executive Vice President and Chief Human Resources Officer of PNC since July 2014. Ms. Henn joined PNC in 1994 and has held numerous management positions. Prior to being named to her current position, Ms. Henn was a Senior Vice President, responsible for Human Resources for Retail Banking.

Gregory B. Jordan joined PNC in 2013 as Executive Vice President, General Counsel and Head of Regulatory and Government Affairs. In February 2016, Mr. Jordan was also appointed Chief Administrative Officer. Prior to joining PNC, he served as the Global Managing Partner for the last 13 years of his 29 year tenure at Reed Smith LLP.

Stacy M. Juchno has served as Executive Vice President and General Auditor of PNC since April 2014 and previously served as Senior Vice President and Finance Governance and Oversight Director.

Ganesh Krishnan was appointed Executive Vice President and Enterprise Chief Information Officer in November 2020. Prior to being named to his current role, he served as Chief Information Officer for PNC's Corporate & Institutional Banking business and Staff Service Technology starting in 2017. Mr. Krishnan joined PNC in 2008 as a Technology Infrastructure Services manager and has held a variety of technology leadership roles with PNC.

Michael P. Lyons has been an Executive Vice President since 2011 and is Head of Corporate & Institutional Banking. Prior to joining PNC in October 2011, from May 2010 until October 2011, Mr. Lyons was head of corporate development and strategic planning for Bank of America.

Alexander E. C. Overstrom was appointed Executive Vice President and Head of Retail Banking in July 2022. Previously, he held numerous management roles including Head of Small Business, Deputy Head of Retail Banking, Head of Merchant Services, and Chief Operating Officer of Corporate & Institutional Banking and Asset Management. Prior to joining PNC in 2014, he worked in strategy and investment banking at Goldman Sachs.

E William Parsley, III has served as Executive Vice President since 2009 and was appointed Chief Operating Officer in February 2018. Previously, he served as Treasurer and Chief Investment Officer starting in 2004 and Head of Consumer Lending starting in the spring of 2016.

Robert Q. Reilly was appointed Chief Financial Officer in 2013. He served as the Head of PNC's Asset Management Group from 2005 until April 2013. Previously, he held numerous management roles in both Corporate Banking and Asset Management. He was appointed Executive Vice President in 2009.

Gregory H. Kozich has served as Controller of PNC since 2011. He was appointed as Senior Vice President in 2010. Prior to joining PNC in 2010, Mr. Kozich was with the Federal National Mortgage Association from 2005 until late 2010, most recently serving as its corporate controller.

PART II

ITEM 5 – MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on the New York Stock Exchange and is traded under the symbol "PNC." At the close of business on February 10, 2023, there were 44,958 common shareholders of record.

Holders of PNC common stock are entitled to receive dividends when declared by our Board of Directors out of funds legally available for this purpose. Our Board of Directors may not pay or set apart dividends on the common stock until dividends for all past dividend periods on any series of outstanding preferred stock and certain outstanding capital securities issued by the parent company have been paid or declared and set apart for payment. The Board of Directors presently intends to continue the policy of paying quarterly cash dividends. The amount of any future dividends will depend on economic and market conditions, our financial condition and operating results, and other factors, including contractual restrictions and applicable government regulations and policies (such as those relating to the ability of bank and non-bank subsidiaries to pay dividends to the parent company and regulatory capital limitations). PNC's ability to pay or increase dividends or otherwise return capital to shareholders is subject to PNC's compliance with its SCB, which is determined at least annually through the Federal Reserve's CCAR process as described in the Supervision and Regulation section in Item 1 of this Report. Consistent with the SCB framework, which allows for capital return in amounts in excess of the SCB minimum levels, our Board of Directors has authorized a repurchase framework under the repurchase program approved on April 4, 2019 of up to 100 million common shares, of which approximately 49% were still available for repurchase at December 31, 2022. Under this framework, PNC expects quarterly repurchases of up to $500 million with the ability to adjust those levels as conditions warrant. PNC's SCB for the four-quarter period beginning October 1, 2022 is 2.9%.

For further information concerning dividend restrictions and other factors that could limit our ability to pay dividends, as well as restrictions on loans, dividends or advances from bank subsidiaries to the parent company, see the Supervision and Regulation section in Item 1, Item 1A Risk Factors and the Liquidity and Capital Management portion of the Risk Management section in Item 7, and Note 10 Borrowed Funds, Note 12 Equity and Note 20 Regulatory Matters, which we include here by reference.

We include here by reference the information regarding our compensation plans under which PNC equity securities are authorized for issuance as of December 31, 2022 in the table (with introductory paragraph and notes) in Item 12 of this Report.

Our stock transfer agent and registrar is:
Computershare
150 Royall Street, Suite 101
Canton, MA 02021
800-982-7652
Hearing impaired: 800-952-9245
www.computershare.com/pnc

Registered shareholders may contact Computershare regarding dividends and other shareholder services.

We include here by reference the information that appears under the Common Stock Performance Graph caption at the end of this Item 5.

Unregistered Sales of Equity Securities

None.

Equity Security Repurchases

Details of our repurchases of PNC common stock during the fourth quarter of 2022 are included in the following table:

In thousands, except per share data

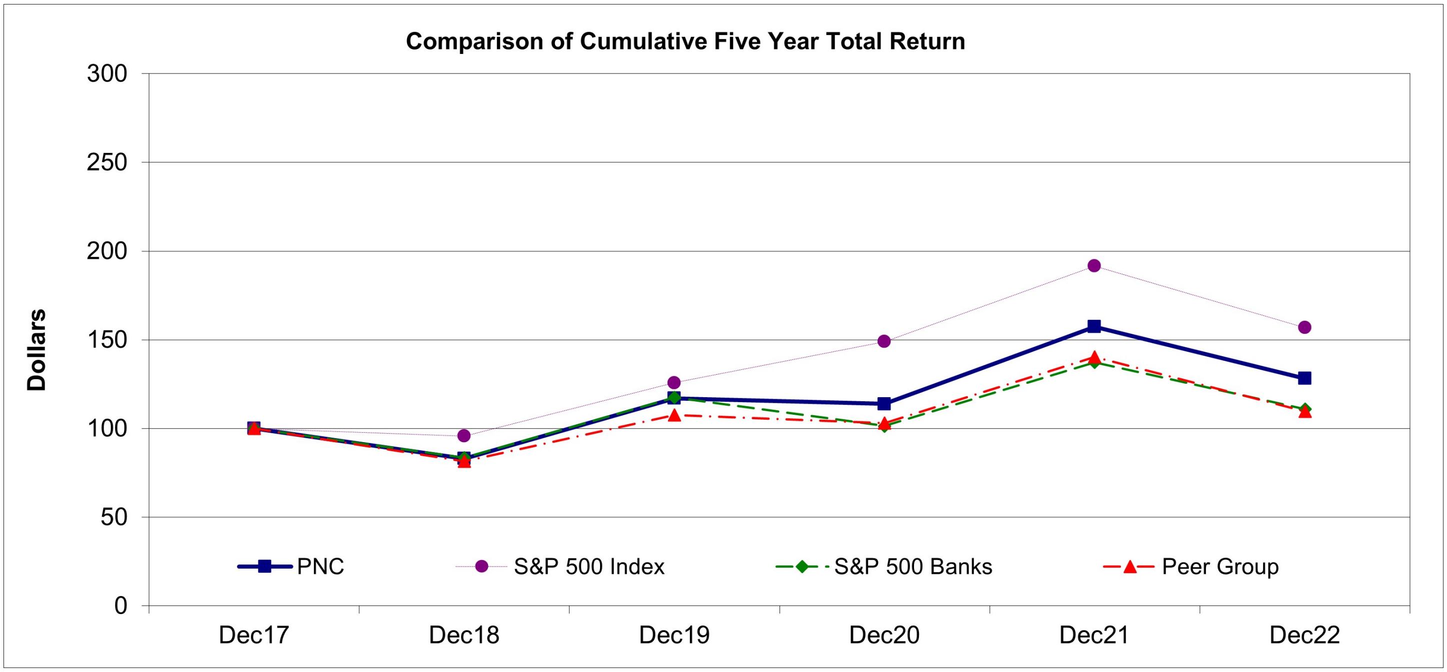
2022 period	Total shares purchased (a)	Average price paid per share	Total shares purchased as part of publicly announced programs (b)	Maximum number of shares that may yet be purchased under the programs (b)
October 1 – 31	1,534	$ 154.72	1,523	51,280
November 1 – 30	1,234	$ 161.33	1,234	50,046
December 1 – 31	1,052	$ 154.63	1,052	48,994
Total	3,820	$ 156.83	3,809	

(a) Includes PNC common stock purchased in connection with our various employee benefit plans generally related to forfeitures of unvested restricted stock awards and shares used to cover employee payroll tax withholding requirements. Note 17 Employee Benefit Plans and Note 18 Stock Based Compensation Plans include additional information regarding our employee benefit and equity compensation plans that use PNC common stock.

(b) Consistent with the SCB framework, which allows for capital return in amounts in excess of the SCB minimum levels, our Board of Directors has authorized a repurchase framework under the repurchase program of up to 100 million common shares approved on April 4, 2019. Under the SCB framework we repurchased 21.1 million shares in 2022 and 5.0 million shares in 2021. A maximum amount of 49.0 million shares remained available for repurchase under the new stock program authorization at December 31, 2022.

Common Stock Performance Graph

This graph shows the cumulative total shareholder return (*i.e.*, price change plus reinvestment of dividends) on our common stock during the five-year period ended December 31, 2022, as compared with: (i) a selected peer group as set forth below and referred to as the "Peer Group"; (ii) an overall stock market index, the S&P 500 Index; and (iii) a published industry index, the S&P 500 Banks. The yearly points marked on the horizontal axis of the graph correspond to December 31 of each year. The stock performance graph assumes that $100 was invested at market close on December 31, 2017 for the five-year period and that dividends were reinvested. The table below the graph shows the resultant compound annual growth rate for the performance period.



	Base Period	Assumes $100 investment at Close of Market on December 31, 2017 Total Return = Price change plus reinvestment of dividends					5-Year Compound Growth Rate
	Dec. 2017	Dec. 2018	Dec. 2019	Dec. 2020	Dec. 2021	Dec. 2022	
PNC	$ 100	$ 83.02	$ 116.97	$ 113.78	$ 157.26	$ 128.07	5.07 %
S&P 500 Index	$ 100	$ 95.61	$ 125.70	$ 148.81	$ 191.48	$ 156.77	9.41 %
S&P 500 Banks	$ 100	$ 83.56	$ 117.52	$ 101.35	$ 137.28	$ 110.91	2.09 %
Peer Group	$ 100	$ 81.35	$ 107.62	$ 103.04	$ 140.25	$ 109.51	1.83 %

The Peer Group for the preceding chart and table above consists of the following companies: Bank of America Corporation; Capital One Financial Corporation; Citizens Financial Group, Inc.; Fifth Third Bancorp; JPMorgan Chase & Co.; KeyCorp; M&T Bank Corporation; Regions Financial Corporation; The PNC Financial Services Group, Inc.; Truist Financial Corporation; U.S. Bancorp; and Wells Fargo & Company. For Truist Financial Corporation, the preceding chart and table reflects historical BB&T Corporation data from December 2017 to December 2018 without inclusion of historical data from SunTrust Banks, Inc. This Peer Group was approved for 2022 by the Board's Personnel and Compensation Committee, and the Committee has approved the same peer group for 2023.

Each yearly point for the Peer Group is determined by calculating the cumulative total shareholder return for each company in the Peer Group from December 31, 2017 to December 31 of that year, or the last business day of that year (End of Month Dividend Reinvestment Assumed) and then using the median of these returns as the yearly plot point.

In accordance with the rules of the SEC, this section, captioned "Common Stock Performance Graph," is not incorporated by reference into any of our future filings made under the Securities Exchange Act of 1934 or the Securities Act of 1933. The Common Stock Performance Graph, including its accompanying table and footnotes, is not deemed to be soliciting material or to be filed under the Exchange Act or the Securities Act.

ITEM 6 – RESERVED

ITEM 7 – MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS (MD&A)

EXECUTIVE SUMMARY

Key Strategic Goals

At PNC we manage our company for the long term. We are focused on the fundamentals of growing customers, loans, deposits and revenue and improving profitability, while investing for the future and managing risk, expenses and capital. We continue to invest in our products, markets and brand, and embrace our commitments to our customers, shareholders, employees and the communities where we do business.

We strive to serve our customers and expand and deepen relationships by offering a broad range of deposit, credit and fee-based products and services. We are focused on delivering those products and services to our customers with the goal of addressing their financial objectives and needs. Our business model is built on customer loyalty and engagement, understanding our customers' financial goals and offering our diverse products and services to help them achieve financial well-being. Our approach is concentrated on organically growing and deepening client relationships across our businesses that meet our risk/return measures.

We are focused on our strategic priorities, which are designed to enhance value over the long term, and consist of:

- Expanding our leading banking franchise to new markets and digital platforms,
- Deepening customer relationships by delivering a superior banking experience and financial solutions, and
- Leveraging technology to create efficiencies that help us better serve customers.

Our capital and liquidity priorities are to support customers, fund business investments and return excess capital to shareholders, while maintaining appropriate capital in light of economic conditions, the Basel III framework and other regulatory expectations. For more detail, see the Supervision and Regulation section in Item 1 Business, the Capital Highlights portion of this Executive Summary and the Liquidity and Capital Management portion of the Risk Management section in this Item 7.

Key Factors Affecting Financial Performance

We face a variety of risks that may impact various aspects of our risk profile from time to time. The extent of such impacts may vary depending on factors such as the current business and economic conditions, political and regulatory environment and operational challenges. Many of these risks and our risk management strategies are described in more detail elsewhere in this Report.

Our success will depend upon, among other things, the following factors that we manage or control:

- Effectively managing capital and liquidity including:
    - Continuing to maintain and, over time, grow our deposit base as a low-cost stable funding source,
    - Prudent liquidity and capital management to meet evolving regulatory capital, capital planning, stress testing and liquidity standards, and
    - Actions we take within the capital and other financial markets.
- Execution of our strategic priorities,
- Management of credit risk in our portfolio,
- Our ability to manage and implement strategic business objectives within the changing regulatory environment,
- The impact of legal and regulatory-related contingencies,
- The appropriateness of critical accounting estimates and related contingencies, and
- Our ability to manage operational risks related to new products and services, changes in processes and procedures or the implementation of new technology.

Our financial performance is also substantially affected by a number of external factors outside of our control, including the following:

- Global and domestic economic conditions, including the length and extent of the economic impacts of the COVID-19 pandemic, and the actions taken to mitigate and manage it,
- The effect of climate change on our business and performance, including indirectly through impacts on our customers,
- The actions by the Federal Reserve, U.S. Treasury and other government agencies, including those that impact money supply and market interest rates and inflation,
- The level of, and direction, timing and magnitude of movement in, interest rates and the shape of the interest rate yield curve,
- The functioning and other performance of, and availability of liquidity in, U.S. and global financial markets, including capital markets,
- The impact of tariffs and other trade policies of the U.S. and its global trading partners,

- Changes in the competitive landscape,
- Impacts of changes in federal, state and local governmental policy, including on the regulatory landscape, capital markets, taxes, infrastructure spending and social programs,
- The impact of market credit spreads on asset valuations,
- The ability of customers, counterparties and issuers to perform in accordance with contractual terms, and the resulting impact on our asset quality,
- Loan demand, utilization of credit commitments and standby letters of credit, and
- The impact on customers and changes in customer behavior due to changing business and economic conditions or regulatory or legislative initiatives.

For additional information on the risks we face, see Item 1A Risk Factors and the Cautionary Statement Regarding Forward-Looking Information section in this Item 7.

Presentation of Noninterest Income

Effective for the first quarter of 2022, PNC updated the presentation of its noninterest income categorization to be based on product and service type, and accordingly, has changed the basis of presentation of its noninterest income revenue streams to: (i) Asset management and brokerage, (ii) Capital markets related, (iii) Card and cash management, (iv) Lending and deposit services, (v) Residential and commercial mortgage and (vi) Other noninterest income. For a description of each updated noninterest income revenue stream, see Note 1 Accounting Policies. Additionally, in the fourth quarter of 2022, PNC updated the name of the noninterest income line item “Capital markets related” to “Capital markets and advisory.” This update did not impact the components of the category. All periods presented herein reflect these changes.

Acquisition of BBVA USA Bancshares, Inc.

On June 1, 2021, PNC acquired BBVA, a U.S. financial holding company conducting its business operations primarily through its U.S. banking subsidiary, BBVA USA. PNC paid $11.5 billion in cash as consideration for the acquisition.

On October 8, 2021, BBVA USA merged into PNC Bank. On October 12, 2021, PNC converted approximately 2.6 million customers, 9,000 employees and over 600 branches across seven states. Our results of operations and balance sheets for all periods presented in this Report reflect the benefit of BBVA’s acquired businesses for the period since the acquisition closed on June 1, 2021.

For additional information on the acquisition of BBVA, see Note 2 Acquisition and Divestiture Activity.

Discontinued Operations

In the second quarter of 2020, PNC divested its entire 22.4% equity investment in BlackRock. Net proceeds from the sale were $14.2 billion with an after-tax gain on sale of $4.3 billion. BlackRock’s historical results are reported as discontinued operations. For additional details on the divestiture of our equity investment in BlackRock, see Note 2 Acquisition and Divestiture Activity.

Selected Financial Data

The following tables include selected financial data which should be reviewed in conjunction with the Consolidated Financial Statements and Notes included in Item 8 of this Report as well as the other disclosures in this Report concerning our historical financial performance, our future prospects and the risks associated with our business and financial performance.

Table 1: Summary of Operations, Per Common Share Data and Performance Ratios

	Year ended December 31		
Dollars in millions, except per share data	2022	2021	2020
Summary of Operations			
Net interest income	$ 13,014	$ 10,647	$ 9,946
Noninterest income	8,106	8,564	6,955
Total revenue	21,120	19,211	16,901
Provision for (recapture of) credit losses	477	(779)	3,175
Noninterest expense	13,170	13,002	10,297
Income from continuing operations before income taxes and noncontrolling interests	7,473	6,988	3,429
Income taxes from continuing operations	1,360	1,263	426
Net income from continuing operations	6,113	5,725	3,003
Income from discontinued operations before taxes			5,777
Income taxes from discontinued operations			1,222
Net income from discontinued operations			4,555
Net income	$ 6,113	$ 5,725	$ 7,558
Net income attributable to common shareholders	$ 5,735	$ 5,436	$ 7,284
Per Common Share			
Diluted earnings from continuing operations	$ 13.85	$ 12.70	$ 6.36
Diluted earnings from discontinued operations			$ 10.60
Total diluted earnings	$ 13.85	$ 12.70	$ 16.96
Book value per common share	$ 99.93	$ 120.61	$ 119.11
Tangible book value per common share (non-GAAP) (a)	$ 72.12	$ 94.11	$ 97.43
Performance Ratios			
Net interest margin (non-GAAP) (b)	2.65 %	2.29 %	2.53 %
Noninterest income to total revenue	38 %	45 %	41 %
Efficiency	62 %	68 %	61 %
Return on:			
Average common shareholders' equity	13.52 %	10.78 %	15.21 %
Average assets	1.11 %	1.09 %	1.68 %

(a) See explanation and reconciliation of this non-GAAP measure in Reconciliation of Tangible Book Value Per Common Share (non-GAAP) Statistical Information (Unaudited) section in Item 8 of this Report.
(b) See explanation and reconciliation of this non-GAAP measure in Average Consolidated Balance Sheet and Net Interest Analysis and Reconciliation of Taxable-Equivalent Net Interest Income (non-GAAP) Statistical Information (Unaudited) section in Item 8 of this Report.

Table 2: Balance Sheet Highlights and Other Selected Ratios

	Year ended December 31	
Dollars in millions, except as noted	2022	2021
Balance Sheet Highlights		
Assets	$557,263	$557,191
Loans	$326,025	$288,372
Allowance for loan and lease losses	$ 4,741	$ 4,868
Interest-earning deposits with banks	$ 27,320	$ 74,250
Investment securities	$139,334	$132,962
Total deposits	$436,282	$457,278
Borrowed funds	$ 58,713	$ 30,784
Total shareholders' equity	$ 45,774	$ 55,695
Common shareholders' equity	$ 40,028	$ 50,685
Other Selected Ratios		
Common equity Tier 1	9.1 %	10.3 %
Dividend payout	41.7 %	37.8 %
Loans to deposits	75 %	63 %
Common shareholders' equity to total assets	7.2 %	9.1 %
Average common shareholders' equity to average assets	7.7 %	9.6 %

Income Statement Highlights

Net income for 2022 was $6.1 billion, or $13.85 per diluted common share, an increase of $0.4 billion compared to net income of $5.7 billion, or $12.70 per diluted common share, for 2021. The increase was driven by higher net interest income, partially offset by a higher provision for credit losses, lower noninterest income and higher expenses.

- Total revenue increased $1.9 billion, or 10%, to $21.1 billion.
  - Net interest income increased $2.4 billion, or 22%, to $13.0 billion, primarily due to higher interest-earning asset yields and balances, partially offset by higher funding costs.
    - Net interest margin increased to 2.65% for 2022 compared to 2.29% for 2021, due to higher interest-earning asset yields, partially offset by higher funding rates.
  - Noninterest income decreased $458 million, or 5%, to $8.1 billion, primarily due to lower capital markets and advisory income, a decrease in private equity revenue and lower residential and commercial mortgage fees, partially offset by an increase in card and cash management revenue.
  - Provision for credit losses was $477 million in 2022, driven by our weakened economic outlook along with loan growth, partially offset by the impacts from the reassessment of pandemic-related risks and credit quality improvement in the portfolio. Provision recapture was $779 million for 2021.
- Noninterest expense increased $168 million to $13.2 billion, reflecting the addition of a full year of BBVA operating expenses and continued business investment. The increase was partially offset by lower integration expenses.

For additional detail, see the Consolidated Income Statement Review section of this Item 7.

Balance Sheet Highlights

Our balance sheet was well positioned at December 31, 2022. In comparison to December 31, 2021:

- Total assets were stable.
- Total loans increased $37.7 billion, or 13%, to $326.0 billion.
  - Total commercial loans grew $32.0 billion, or 17%, to $225.0 billion, due to new production and higher utilization of loan commitments, partially offset by PPP loan forgiveness.
    - PNC had $0.4 billion of PPP loans outstanding at December 31, 2022, compared to $3.4 billion at December 31, 2021.
  - Total consumer loans increased $5.7 billion, or 6%, to $101.0 billion, primarily due to increases in residential mortgages, home equity and credit card, partially offset by declines in the remaining portfolios as paydowns outpaced new originations.
- Investment securities increased $6.4 billion, or 5%, to $139.3 billion due to net purchases, primarily of agency residential mortgage-backed securities, partially offset by a decline in valuation driven by interest rates.
- Interest earning deposits with banks, primarily with the Federal Reserve Bank, decreased $46.9 billion, or 63% to $27.3 billion, reflecting higher loans outstanding, lower deposits and higher securities balances.
- Total deposits decreased $21.0 billion, or 5%, to $436.3 billion, due to lower commercial and consumer deposits, reflecting the impact of inflationary pressures and competitive pricing dynamics.
- Borrowed funds of $58.7 billion increased $27.9 billion, or 91%, due to higher FHLB borrowings, partially offset by lower senior debt.

For additional detail, see the Consolidated Balance Sheet Review section of this Item 7.

Credit Quality Highlights

2022 reflected strong credit quality performance.

- At December 31, 2022 compared to December 31, 2021:
  - Nonperforming assets of $2.0 billion decreased $487 million, or 19%, due to lower commercial and consumer nonperforming loans.
  - Total loan delinquencies of $1.5 billion decreased $495 million, or 25%, driven by lower consumer and commercial delinquencies.
  - The ACL related to loans, which consists of the ALLL and the allowance for unfunded lending related commitments, decreased to $5.4 billion, or 1.67% of total loans at December 31, 2022, compared to $5.5 billion, or 1.92% of total loans at December 31, 2021. The decrease was primarily driven by the reassessment of pandemic-related risks and improvements in credit quality, partially offset by our weakened economic outlook along with loan growth.
- Net charge-offs of $563 million or 0.18% of average loans in 2022 decreased 14% compared to net charge-offs of $657 million or 0.24% of average loans for 2021. The decline was primarily driven by fewer commercial net charge-offs, partially offset by higher consumer net charge-offs due to a decrease in recoveries. Net charge-offs in the comparative period included BBVA-related charge-offs resulting from required purchase accounting treatment.

For additional detail, see the Credit Risk Management portion of the Risk Management section of this Item 7.

Capital Highlights

We maintained a strong capital position during 2022.

- Common shareholders' equity decreased to $40.0 billion at December 31, 2022, compared to $50.7 billion at December 31, 2021 as the benefit of net income was more than offset by a decrease in AOCI, reflecting the negative impact of higher interest rates on securities and swap values. The decline was also attributable to share repurchases and common dividends paid.
- In 2022, we returned $6.0 billion of capital to shareholders through dividends on common shares of $2.4 billion and repurchases of 21.2 million common shares for $3.6 billion.
    - The SCB framework allows for capital returns in amounts up to the level of capital in excess of the firm's SCB plus the regulatory minimum level of capital. Consistent with the flexibility provided under the SCB framework, our Board of Directors has authorized a repurchase framework under the repurchase program approved on April 4, 2019 of up to 100 million common shares, of which approximately 49% were still available for repurchase at December 31, 2022. Under this framework, PNC expects quarterly repurchases of up to $500 million with the ability to adjust those levels as conditions warrant. PNC's SCB for the four-quarter period beginning October 1, 2022 is 2.9%.
- On January 4, 2023, the PNC Board of Directors declared a quarterly cash dividend on common stock of $1.50 per share. The dividend, with a payment date of February 5, 2023, was paid on the next business day.
- The Basel III CET1 capital ratio decreased to 9.1% at December 31, 2022 from 10.3% at December 31, 2021.
    - PNC elected to delay the estimated impact of CECL on CET1 capital through December 31, 2021, followed by a three-year transition period. CECL's estimated impact on CET1 capital is defined as the change in retained earnings at adoption plus or minus 25% of the change in CECL ACL at the balance sheet date, excluding the allowance for PCD loans, compared to CECL ACL at adoption. Effective for the first quarter of 2022, PNC is now in the three-year transition period, and the full impact of the CECL standard is being phased-in to regulatory capital through December 31, 2024. The CET1 fully implemented ratio, which reflects the full impact of CECL and excludes the benefits of the optional five-year transition, was 8.9% at December 31, 2022 compared to 10.0% at December 31, 2021.

PNC's ability to take certain capital actions, including returning capital to shareholders, is subject to PNC meeting or exceeding a SCB established by the Federal Reserve Board in connection with the Federal Reserve Board's CCAR process. See additional discussion of the CCAR process in the Supervision and Regulation section of Item 1 Business and Item 1A Risk Factors of this Report.

See the Liquidity and Capital Management portion of the Risk Management section of this Item 7 for more detail on our 2022 capital and liquidity actions as well as our capital ratios.

Business Outlook

Statements regarding our business outlook are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. Our forward-looking financial statements are subject to the risk that economic and financial market conditions will be substantially different than those we are currently expecting and do not take into account potential legal and regulatory contingencies. These statements are based on our views that:

- The economy continues to expand in early 2023, but economic growth is slowing in response to the ongoing Federal Reserve monetary policy tightening to slow inflation. This has led to large increases in both short- and long-term interest rates. With much higher mortgage rates the housing market is already in contraction, with steep drops in existing home sales and single-family housing starts, and a modest decline in house prices. Other sectors where interest rates play an outsized role, such as business investment and consumer spending on durable goods, will contract in 2023.
- PNC's baseline outlook is for a recession starting in the second half of 2023, with real GDP contracting a modest 1% before recovery starts in early 2024 as the Federal Reserve lowers interest rates in response to a deteriorating labor market and slower inflation. The unemployment rate will increase throughout 2023, peaking at above 5% in the first half of 2024. Inflation will slow with the recession and be back to the Federal Reserve's 2% long-term objective by early 2024.
- PNC expects the FOMC to increase the federal funds rate by an additional 25 basis points in March. This would bring the federal funds rate to a range of 4.75% to 5.00% by mid-March. PNC expects a federal funds rate cut of 25 basis points in early 2024 as inflation moves toward the FOMC's 2% long-term objective.

See Item 1A Risk Factors and the Cautionary Statement Regarding Forward-Looking Information section in this Item 7 for other factors that could cause future events to differ, perhaps materially, from those anticipated in these forward-looking statements.

For the full year 2023, compared to full year 2022, we expect:

- Period-end loans to be up 2% to 4%,
- Average loans to be up 6% to 8%,
- Revenue to be up 6% to 8%,
- Noninterest expense to be up 2% to 4%, and
- The effective tax rate to be approximately 18%.

For the first quarter of 2023, compared to the fourth quarter of 2022, we expect:

- Period-end loans to be stable,
- Average loans to be up 1% to 2%,
- Net interest income to be down 1% to 2%,
- Fee income to be down 3% to 5%,
- Other noninterest income, excluding net securities gains and Visa activity, to be between $200 million and $250 million,
- Total revenue to decline approximately 3%,
- Noninterest expense to be down 2% to 4%, and
- Net loan charge-offs to be approximately $200 million.

Additionally, as of year-end 2022, we have completed all actions associated with the integration of BBVA, and no additional integration costs are anticipated. A total of $980 million of integration costs were incurred, which included $120 million of write-offs for capitalized items.

We cannot provide, without unreasonable effort, a meaningful or accurate reconciliation of forward-looking non-GAAP measures to their most directly comparable GAAP financial measures. This is due to the inherent difficulty of forecasting the timing and amounts necessary for the reconciliation when such amounts are subject to events that cannot be reasonably predicted, as noted in our Cautionary Statement. Accordingly, we cannot address the probable significance of the unavailable information.

Consolidated Income Statement Review

Our Consolidated Income Statement is presented in Item 8 of this Report. For the comparison of 2021 over 2020, see the Consolidated Income Statement Review section in our 2021 Form 10-K.

Net income for 2022 was $6.1 billion, or $13.85 per diluted common share, an increase of $0.4 billion compared to net income of $5.7 billion, or $12.70 per diluted common share, for 2021. The increase was driven by higher net interest income, partially offset by a higher provision for credit losses, lower noninterest income and higher expenses.

Net Interest Income

Table 3: Summarized Average Balances and Net Interest Income (a)

Year ended December 31 Dollars in millions	2022 Average Balances	2022 Average Yields/ Rates	2022 Interest Income/ Expense	2021 Average Balances	2021 Average Yields/ Rates	2021 Interest Income/ Expense
Assets						
Interest-earning assets						
Investment securities	$ 137,149	2.00 %	$ 2,747	$ 110,974	1.67 %	$ 1,855
Loans	307,699	3.86 %	11,886	268,696	3.37 %	9,060
Interest-earning deposits with banks	41,050	1.41 %	578	79,869	0.13 %	103
Other	9,651	3.50 %	337	8,539	2.23 %	190
Total interest-earning assets/interest income	$ 495,549	3.14 %	15,548	$ 468,078	2.39 %	11,208
Liabilities						
Interest-bearing liabilities						
Interest-bearing deposits	$ 299,042	0.42 %	1,267	$ 279,228	0.05 %	126
Borrowed funds	42,450	2.72 %	1,155	34,508	1.05 %	361
Total interest-bearing liabilities/interest expense	$ 341,492	0.71 %	2,422	$ 313,736	0.16 %	487
Net interest margin/income (non-GAAP)		2.65 %	13,126		2.29 %	10,721
Taxable-equivalent adjustments			(112)			(74)
Net interest income (GAAP)			$ 13,014			$ 10,647

(a) Interest income calculated as taxable-equivalent interest income. To provide more meaningful comparisons of interest income and yields for all interest-earning assets, as well as net interest margins, we use interest income on a taxable-equivalent basis in calculating average yields and net interest margins by increasing the interest income earned on tax-exempt assets to make it fully equivalent to interest income earned on taxable investments. This adjustment is not permitted under GAAP on the Consolidated Income Statement. For more information, see Reconciliation of Taxable-Equivalent Net Interest Income (non-GAAP) in the Statistical Information (Unaudited) section in Item 8 of this Report.

Changes in net interest income and margin result from the interaction of the volume and composition of interest-earning assets and related yields, interest-bearing liabilities and related rates paid, and noninterest-bearing sources of funding. See the Statistical Information (Unaudited) – Average Consolidated Balance Sheet and Net Interest Analysis and Analysis Of Year-To-Year Changes In Net Interest Income in Item 8 of this Report.

Net interest income increased $2.4 billion, or 22% in 2022 compared with 2021. The increase was primarily due to higher interest-earning asset yields and balances, partially offset by higher funding costs. Net interest margin increased 36 basis points, due to higher interest-earning asset yields, partially offset by higher funding rates.

Average investment securities grew $26.2 billion, or 24%, driven by net securities purchases, primarily of agency residential mortgage-backed securities and U.S. Treasury and government agency securities. Average investment securities represented 28% of average interest-earning assets in 2022, compared to 24% in 2021.

Average loans increased $39.0 billion, or 15%, due to growth in commercial and consumer loans, partially offset by PPP loan forgiveness. Average loans represented 62% of average interest-earning assets in 2022 compared to 57% in 2021.

Average interest-earning deposits with banks decreased $38.8 billion reflecting higher loan balances and net securities purchases, partially offset by higher deposits and borrowed funds.

Average interest-bearing deposits grew $19.8 billion, or 7%, and included a shift in commercial deposits from noninterest-bearing to interest-bearing as deposit rates have risen. In total, average interest-bearing deposits represented 88% of average interest-bearing liabilities in 2022 compared to 89% in 2021.

Average borrowed funds increased $7.9 billion, or 23%, primarily due to higher FHLB borrowings, partially offset by lower senior debt.

Further details regarding average loans and deposits are included in the Business Segments Review section of this Item 7.

Noninterest Income

Table 4: Noninterest Income

Year ended December 31 Dollars in millions	2022	2021	Change $	Change %
Noninterest income				
Asset management and brokerage	$ 1,444	$ 1,438	$ 6	—
Capital markets and advisory	1,296	1,577	(281)	(18)%
Card and cash management	2,633	2,398	235	10 %
Lending and deposit services	1,134	1,102	32	3 %
Residential and commercial mortgage	647	850	(203)	(24)%
Other	952	1,199	(247)	(21)%
Total noninterest income	$ 8,106	$ 8,564	$ (458)	(5)%

Noninterest income as a percentage of total revenue was 38% for 2022 and 45% for 2021.

Asset management and brokerage fees increased due to the full-year benefit of BBVA and increased product sales, partially offset by lower average equity markets. PNC's discretionary client assets under management decreased to $173 billion at December 31, 2022, compared to $192 billion at December 31, 2021, driven by lower spot equity markets.

Capital markets and advisory fees decreased primarily due to lower advisory and underwriting fees, partially offset by higher fees on customer-related derivative activities.

Growth in card and cash management revenue was primarily due to increased treasury management product revenue, including the full-year benefit of BBVA, in addition to higher consumer spending.

Lending and deposit services increased and included the full-year benefit of BBVA.

Residential and commercial mortgage decreased due to lower residential and commercial mortgage banking activities driven by a decline in both origination and sales activity, partially offset by higher residential mortgage servicing income.

Other noninterest income decreased compared to 2021, primarily due to lower private equity revenue and net losses on securities, partially offset by the benefit of lower negative Visa Class B derivative fair value adjustments. Further details regarding our customer-related trading activities are included in the Market Risk Management – Customer-Related Trading Risk portion of the Risk Management section of this Item 7. Further details regarding private and other equity investments are included in the Market Risk Management – Equity and Other Investment Risk section.

Noninterest Expense

Table 5: Noninterest Expense

Year ended December 31 Dollars in millions	2022	2021	Change $	Change %
Noninterest expense				
Personnel	$ 7,244	$ 7,141	$ 103	1 %
Occupancy	992	940	52	6 %
Equipment	1,395	1,411	(16)	(1)%
Marketing	355	319	36	11 %
Other	3,184	3,191	(7)	—
Total noninterest expense	$ 13,170	$ 13,002	$ 168	1 %

The increase to noninterest expense included a full year of BBVA operating expenses and continued business investment, as well as the write-off of insignificant technology projects connected to crypto currency product development, all of which has ceased as of the reporting date. The increase was partially offset by lower integration expenses.

We exceeded our 2022 continuous improvement program savings goal of $300 million. In 2023, we increased our goal to $400 million in cost savings.

Effective Income Tax Rate

The effective income tax rate from continuing operations was 18.2% for 2022 compared with 18.1% for 2021.

The effective tax rate is generally lower than the statutory rate primarily due to tax credits we receive from our investments in low-income housing and new markets investments, as well as earnings on other tax exempt investments. Additional information regarding our effective tax rate is included in the Reconciliation of Statutory and Effective Tax Rates table in Note 19 Income Taxes.

Provision for (Recapture of) Credit Losses

Table 6: Provision for (Recapture of) Credit Losses

Year ended December 31 Dollars in millions	2022	2021
Provision for (recapture of) credit losses		
Loans and leases	$ 439	$ (887)
Unfunded lending related commitments	32	32
Investment securities	17	51
Other financial assets	(11)	25
Total provision for (recapture of) credit losses	$ 477	$ (779)

Provision for credit losses was $477 million in 2022, driven by our weakened economic outlook along with loan growth, partially offset by the impacts from the reassessment of pandemic-related risks and credit quality improvement in the portfolio.

Net interest income less the provision for (recapture of) credit losses was $12.5 billion, $11.4 billion and $6.8 billion for 2022, 2021 and 2020, respectively.

CONSOLIDATED BALANCE SHEET REVIEW

The summarized balance sheet data in Table 7 is based upon our Consolidated Balance Sheet in Item 8 of this Report. For additional detail of the comparison of 2021 over 2020, see the Consolidated Balance Sheet Review section in our 2021 Form 10-K.

Table 7: Summarized Balance Sheet Data

	December 31	December 31	Change	
Dollars in millions	2022	2021	$	%
Assets				
Interest-earning deposits with banks	$ 27,320	$ 74,250	$ (46,930)	(63)%
Loans held for sale	1,010	2,231	(1,221)	(55)%
Investment securities	139,334	132,962	6,372	5 %
Loans	326,025	288,372	37,653	13 %
Allowance for loan and lease losses	(4,741)	(4,868)	127	3 %
Mortgage servicing rights	3,423	1,818	1,605	88 %
Goodwill	10,987	10,916	71	1 %
Other	53,905	51,510	2,395	5 %
Total assets	$ 557,263	$ 557,191	$ 72	—
Liabilities				
Deposits	$ 436,282	$ 457,278	$ (20,996)	(5)%
Borrowed funds	58,713	30,784	27,929	91 %
Allowance for unfunded lending related commitments	694	662	32	5 %
Other	15,762	12,741	3,021	24 %
Total liabilities	511,451	501,465	9,986	2 %
Equity				
Total shareholders' equity	45,774	55,695	(9,921)	(18)%
Noncontrolling interests	38	31	7	23 %
Total equity	45,812	55,726	(9,914)	(18)%
Total liabilities and equity	$ 557,263	$ 557,191	$ 72	—

Our balance sheet was well-positioned at December 31, 2022. In comparison to December 31, 2021:
- Total assets were stable as higher loans, securities and MSRs were offset by lower balances held with the Federal Reserve Bank.
- Total liabilities increased primarily due to higher borrowed funds, partially offset by a decrease in deposits.
- Total equity decreased as the benefits from net income and preferred stock issuances were more than offset by a decrease in AOCI, reflecting the negative impact of higher interest rates on securities and swap values. The decline was also attributable to common share repurchases, dividends paid and the redemption of preferred stock.

The ACL related to loans totaled $5.4 billion at December 31, 2022, a decrease of $0.1 billion since December 31, 2021. The decrease was primarily driven by the reassessment of pandemic-related risks and improvements in credit quality, partially offset by our weakened economic outlook along with loan growth.

See the following for additional information regarding our ACL related to loans:
- Allowance for Credit Losses in the Credit Risk Management section of this Item 7,
- Critical Accounting Estimates and Judgments section of this Item 7, and
- Note 1 Accounting Policies and Note 4 Loans and Related Allowance for Credit Losses.

The following discussion provides additional information about the major components of our balance sheet. Information regarding our capital and regulatory compliance is included in the Liquidity and Capital Management portion of the Risk Management section of this Item 7 and in Note 20 Regulatory Matters.

Loans

Table 8: Loans

Dollars in millions	December 31 2022	December 31 2021	Change $	Change %
Commercial				
Commercial and industrial	$ 182,219	$ 152,933	$ 29,286	19 %
Commercial real estate	36,316	34,015	2,301	7 %
Equipment lease financing	6,514	6,130	384	6 %
Total commercial	225,049	193,078	31,971	17 %
Consumer				
Residential real estate	45,889	39,712	6,177	16 %
Home equity	25,983	24,061	1,922	8 %
Automobile	14,836	16,635	(1,799)	(11)%
Credit card	7,069	6,626	443	7 %
Education	2,173	2,533	(360)	(14)%
Other consumer	5,026	5,727	(701)	(12)%
Total consumer	100,976	95,294	5,682	6 %
Total loans	$ 326,025	$ 288,372	$ 37,653	13 %

Commercial loans increased primarily due to new production and higher utilization of loan commitments, partially offset by PPP loan forgiveness. PNC had $0.4 billion of PPP loans outstanding at December 31, 2022, compared to $3.4 billion at December 31, 2021.

Consumer loans increased primarily due to increases in residential mortgages, home equity and credit card, partially offset by declines in the remaining portfolios as paydowns outpaced new originations.

For additional information regarding our loan portfolio, see the Credit Risk Management portion of the Risk Management section, Note 1 Accounting Policies and Note 4 Loans and Related Allowance for Credit Losses.

Investment Securities

Investment securities of $139.3 billion at December 31, 2022 increased $6.4 billion, or 5%, compared to December 31, 2021, due to net purchases, primarily of agency residential mortgage-backed securities, partially offset by a decline in valuation driven by interest rates.

The level and composition of the investment securities portfolio fluctuates over time based on many factors, including market conditions, loan and deposit growth, and balance sheet management activities. We manage our investment securities portfolio to optimize returns, while providing a reliable source of liquidity for our banking and other activities, considering the LCR, NSFR and other internal and external guidelines and constraints.

Table 9: Investment Securities (a)

Dollars in millions	December 31, 2022 Amortized Cost (b)	December 31, 2022 Fair Value	December 31, 2021 Amortized Cost (b)	December 31, 2021 Fair Value
U.S. Treasury and government agencies	$ 45,767	$ 43,330	$ 47,024	$ 47,054
Agency residential mortgage-backed	77,385	71,073	67,326	67,632
Non-agency residential mortgage-backed	973	1,074	927	1,158
Agency commercial mortgage-backed	2,693	2,501	1,740	1,773
Non-agency commercial mortgage-backed (c)	2,992	2,883	3,423	3,436
Asset-backed (d)	7,291	7,183	6,380	6,409
Other debt (e)	6,642	6,394	5,404	5,596
Total investment securities (f)	$ 143,743	$ 134,438	$ 132,224	$ 133,058

(a) Of our total securities portfolio, 97% and 96% were rated AAA/AA as of December 31, 2022 and 2021, respectively.
(b) Amortized cost is presented net of the allowance for investment securities, which totaled $149 million at December 31, 2022 and primarily related to non-agency commercial mortgage-backed securities. The comparable amount at December 31, 2021 was $133 million.
(c) Collateralized primarily by office buildings, multifamily housing, retail properties, lodging properties and industrial properties.
(d) Collateralized primarily by corporate debt, government guaranteed education loans and other consumer credit products.
(e) Includes state and municipal securities.
(f) Includes available for sale and held to maturity securities, which are recorded on our balance sheet at fair value and amortized cost, respectively.

Table 9 presents the distribution of our investment securities portfolio by amortized cost and fair value. The relationship of fair value to amortized cost at December 31, 2022 compared to December 31, 2021 primarily reflected the impact of higher interest rates on the valuation of fixed rate securities. We continually monitor the credit risk in our portfolio and maintain the allowance for investment securities at an appropriate level to absorb expected credit losses on our investment securities portfolio for the remaining contractual term of the securities adjusted for expected prepayments. See Note 3 Investment Securities for additional details regarding the allowance for investment securities.

During 2022, we transferred securities with a fair value of $82.7 billion from available for sale to held to maturity. We changed our intent and committed to hold these high-quality securities to maturity in order to reduce the impact of price volatility on AOCI and tangible capital. See Note 3 Investment Securities for additional details regarding these transfers.

The duration of investment securities was 4.5 years at December 31, 2022. We estimate that at December 31, 2022 the effective duration of investment securities was 4.4 years for an immediate 50 basis points parallel increase in interest rates and 4.5 years for an immediate 50 basis points parallel decrease in interest rates. Comparable amounts at December 31, 2021 for the effective duration of investment securities were 3.8 years and 3.5 years, respectively.

Based on expected prepayment speeds, the weighted-average expected maturity of the investment securities portfolio was 6.0 years at December 31, 2022 compared to 4.4 years at December 31, 2021.

Table 10: Weighted-Average Expected Maturities of Mortgage and Asset-Backed Debt Securities

December 31, 2022	Years
Agency residential mortgage-backed	7.7
Non-agency residential mortgage-backed	10.0
Agency commercial mortgage-backed	5.6
Non-agency commercial mortgage-backed	1.4
Asset-backed	2.4

Additional information regarding our investment securities portfolio is included in Note 3 Investment Securities and Note 15 Fair Value.

Funding Sources

Table 11: Details of Funding Sources

Dollars in millions	December 31 2022	December 31 2021	Change $	Change %
Deposits				
Noninterest-bearing	$ 124,486	$ 155,175	$ (30,689)	(20)%
Interest-bearing				
Money market	64,150	61,229	2,921	5 %
Demand	126,143	115,910	10,233	9 %
Savings	103,033	107,598	(4,565)	(4)%
Time deposits	18,470	17,366	1,104	6 %
Total interest-bearing deposits	311,796	302,103	9,693	3 %
Total deposits	436,282	457,278	(20,996)	(5)%
Borrowed funds				
Federal Home Loan Bank borrowings	32,075		32,075	—
Senior debt	16,657	20,661	(4,004)	(19)%
Subordinated debt	6,307	6,996	(689)	(10)%
Other	3,674	3,127	547	17 %
Total borrowed funds	58,713	30,784	27,929	91 %
Total funding sources	$ 494,995	$ 488,062	$ 6,933	1 %

Total deposits decreased due to lower commercial and consumer deposits, reflecting competitive pricing dynamics and the impact of inflationary pressures. In addition, there was a shift from noninterest-bearing to interest-bearing deposits in 2022, reflecting the impact of higher interest rates.

Borrowed funds increased due to higher FHLB borrowings, partially offset by lower senior debt.

The level and composition of borrowed funds fluctuates over time based on many factors, including market conditions, loans, investment securities, deposit growth and capital considerations. We manage our borrowed funds to provide a reliable source of liquidity for our banking and other activities, considering our LCR and NSFR requirements and other internal and external guidelines and constraints. See the Liquidity and Capital Management portion of the Risk Management section of this Item 7 for additional information regarding our 2022 liquidity and capital activities. See Note 10 Borrowed Funds for additional information related to our borrowings.

Shareholders' Equity

Total shareholders' equity was $45.8 billion at December 31, 2022, a decrease of $9.9 billion compared to December 31, 2021, as increases related to net income of $6.1 billion and preferred stock issuances of $2.2 billion were more than offset by a decrease in AOCI of $10.6 billion, reflecting the negative impact of higher interest rates on securities and swap values. The decline was also attributable to common share repurchases of $3.6 billion, dividends paid of $2.6 billion and a preferred stock redemption of $1.5 billion.

BUSINESS SEGMENTS REVIEW

We have three reportable business segments:

- Retail Banking
- Corporate & Institutional Banking
- Asset Management Group

Business segment results and a description of each business are included in Note 23 Segment Reporting. Certain amounts included in this Business Segments Review differ from those amounts shown in Note 23, primarily due to the presentation in this Item 7 of business net interest income on a taxable-equivalent basis. Note 23 presents results of businesses for 2022, 2021 and 2020.

Net interest income in business segment results reflects our internal funds transfer pricing methodology. Assets receive a funding charge, and liabilities and capital receive a funding credit based on a transfer pricing methodology that incorporates product repricing characteristics, tenor and other factors.

Total business segment financial results differ from total consolidated net income. The impact of these differences is reflected in the "Other" category as shown in Table 120 in Note 23 Segment Reporting. "Other" includes residual activities that do not meet the criteria for disclosure as a separate reportable business, such as asset and liability management activities including net securities gains or losses, ACL for investment securities, certain trading activities, certain runoff consumer loan portfolios, private equity investments, intercompany eliminations, certain corporate overhead, tax adjustments that are not allocated to business segments, exited businesses, and differences between business segment performance reporting and financial statement reporting (GAAP).

Retail Banking

Retail Banking's core strategy is to help all of our consumer and small business customers move forward financially. We aim to grow our primary checking and transaction relationships through strong customer acquisition and retention. We seek to deepen relationships by meeting the broad range of our customers' financial needs with savings, liquidity, lending, payments investment and retirement solutions. A strategic priority for us is to differentiate the customer experience, leveraging technology to make banking easier for our customers. A key element of our strategy is to expand the use of lower-cost alternative distribution channels, with an emphasis on digital capabilities, and ATM access while continuing to optimize the traditional branch network. In addition, we are focused on consistently engaging both our employees and customers, which is a strong driver of customer growth, retention and relationship expansion.

Table 12: Retail Banking Table

(Unaudited) Year ended December 31 Dollars in millions, except as noted	2022	2021	Change $	Change %
Income Statement				
Net interest income	$ 7,540	$ 6,206	$ 1,334	21 %
Noninterest income	2,967	2,796	171	6 %
Total revenue	10,507	9,002	1,505	17 %
Provision for (recapture of) credit losses	259	(101)	360	*
Noninterest expense	7,598	6,916	682	10 %
Pretax earnings	2,650	2,187	463	21 %
Income taxes	621	508	113	22 %
Noncontrolling interests	55	31	24	77 %
Earnings	$ 1,974	$ 1,648	$ 326	20 %
Average Balance Sheet				
Loans held for sale	$ 927	$ 1,328	$ (401)	(30)%
Loans				
Consumer				
Residential real estate	$ 33,643	$ 25,230	$ 8,413	33 %
Home equity	23,221	22,387	834	4 %
Automobile	15,425	15,787	(362)	(2)%
Credit card	6,620	6,182	438	7 %
Education	2,381	2,770	(389)	(14)%
Other consumer	2,164	2,397	(233)	(10)%
Total consumer	83,454	74,753	8,701	12 %
Commercial	11,177	14,321	(3,144)	(22)%
Total loans	$ 94,631	$ 89,074	$ 5,557	6 %
Total assets	$ 113,829	$ 106,331	$ 7,498	7 %
Deposits				
Noninterest-bearing	$ 64,775	$ 57,729	$ 7,046	12 %
Interest-bearing	199,614	184,040	15,574	8 %
Total deposits	$ 264,389	$ 241,769	$ 22,620	9 %
Performance Ratios				
Return on average assets	1.73 %	1.55 %		
Noninterest income to total revenue	28 %	31 %		
Efficiency	72 %	77 %		

(continued on following page)

(Continued from previous page)

Year ended December 31 Dollars in millions, except as noted	2022	2021	Change $	Change %
Supplemental Noninterest Income Information				
Asset management and brokerage	$ 528	$ 465	$ 63	14 %
Card and cash management	$ 1,338	$ 1,281	$ 57	4 %
Lending and deposit services	$ 670	$ 619	$ 51	8 %
Residential and commercial mortgage	$ 319	$ 456	$ (137)	(30)%
Residential Mortgage Information				
Residential mortgage servicing statistics (in billions, except as noted) (a)				
Serviced portfolio balance (b)	$ 190	$ 133	$ 57	43 %
Serviced portfolio acquisitions	$ 74	$ 44	$ 30	68 %
MSR asset value (b)	$ 2.3	$ 1.1	$ 1.2	109 %
MSR capitalization value (in basis points) (b)	122	81	41	51 %
Servicing income: (in millions)				
Servicing fees, net (c)	$ 192	$ 34	$ 158	*
Mortgage servicing rights valuation, net of economic hedge	$ 9	$ 64	$ (55)	(86)%
Residential mortgage loan statistics				
Loan origination volume (in billions)	$ 15.1	$ 24.8	$ (9.7)	(39)%
Loan sale margin percentage	2.14 %	2.84 %		
Percentage of originations represented by:				
Purchase volume (d)	67 %	43 %		
Refinance volume	33 %	57 %		
Other Information (b)				
Customer-related statistics (average)				
Non-teller deposit transactions (e)	64 %	65 %		
Digital consumer customers (f)	78 %	79 %		
Credit-related statistics				
Nonperforming assets	$ 1,003	$ 1,220	$ (217)	(18)%
Net charge-offs - loans and leases	$ 435	$ 393	$ 42	11 %
Other statistics				
ATMs	8,933	9,523	(590)	(6)%
Branches (g)	2,518	2,629	(111)	(4)%
Brokerage account client assets (in billions) (h)	$ 70	$ 78	$ (8)	(10)%

* - Not Meaningful

(a) Represents mortgage loan servicing balances for third parties and the related income.

(b) Presented as of period end, except for average customer-related statistics and net charge-offs, which are both shown for the year ended, respectively.

(c) Servicing fees net of impact of decrease in MSR value due to passage of time, including the impact from both regularly scheduled loan payments, prepayments and loans that were paid down or paid off during the period.

(d) Mortgages with borrowers as part of residential real estate purchase transactions.

(e) Percentage of total consumer and business banking deposit transactions processed at an ATM or through our mobile banking application.

(f) Represents consumer checking relationships that process the majority of their transactions through non-teller channels.

(g) Reflects all branches and solution centers excluding standalone mortgage offices and satellite offices (e.g., drive-ups, electronic branches and retirement centers) that provide limited products and/or services.

(h) Includes cash and money market balances.

Retail Banking earnings increased $326 million in 2022 compared with 2021. The increase in earnings was attributable to higher net interest income and noninterest income, partially offset by increased noninterest expense and a higher provision for credit losses.

Net interest income increased primarily due to growth in average deposits and loan balances, reflecting the full-year benefit of BBVA acquisition, along with wider interest rate spreads on the value of deposits, partially offset by narrower interest rate spreads on the value of loans.

Noninterest income included the full-year impact of the BBVA acquisition and increased due to the favorable impact of Visa Class B derivative fair value adjustments, higher brokerage fees reflecting favorable annuity activity, growth in card and cash management revenue driven by increased credit and debit card activity, and higher lending and deposit related fees driven by increased service charges on deposits. The increase in noninterest income was partially offset by declines in residential mortgage revenue, driven by lower loan sales revenue reflecting the higher interest rate environment.

Provision for credit losses was driven by our weakened economic outlook, partially offset by the impacts from the reassessment of pandemic-related risks and credit quality improvement in the portfolio.

Noninterest expense increased due to the full-year impact of BBVA operating expenses, increased business activity and continued investments to support business growth.

The deposit strategy of Retail Banking is to remain disciplined on pricing and focused on growing and retaining relationship-based balances, executing on market-specific deposit growth strategies and providing a source of low-cost funding and liquidity to PNC. In 2022, average total deposits increased compared to 2021 primarily driven by growth in demand and savings deposits, which benefited from the full-year impact of the BBVA acquisition.

Retail Banking average total loans increased in 2022 compared to 2021. Average consumer loans increased 12% due to the full-year impact of the BBVA acquisition on all loan classes except education loans, which BBVA did not have in its loan portfolio, partially offset by a decline in auto and other consumer loans as paydowns outpaced new originations. In addition, average residential real estate loans increased, as new originations outpaced runoff. Average commercial loans decreased primarily due to PPP loans.

As part of our strategic focus on growing customers and meeting their financial needs, we have established a coast-to-coast network of retail branches, solution centers and ATMs that operate alongside PNC's suite of digital capabilities. Over time, we plan to continue to convert a portion of branches into solution centers, which have a distinctive layout and the capability to support transactions, sales and advice, using a combination of technology and personalized banker assistance. PNC began to deploy solution centers in 2018.

Retail Banking continues to enhance the customer experience with refinements to product and service offerings that drive value for consumers and small businesses. We are focused on meeting the financial needs of customers by providing a broad range of liquidity, banking, payments and investment products. In 2021, we successfully rolled out Low Cash Mode® to all Virtual Wallet® customers, providing them with the ability to avoid unnecessary overdraft fees through real-time alerts, extra time to prevent or address overdrafts and controls to choose whether to return certain debits rather than the bank making the decision. In 2022, we continued to make product benefit enhancements, such as by eliminating non-sufficient fund fees for all consumer checking account customers. Virtual Wallet® customers had previously received this benefit with the launch of Low Cash Mode®.

Retail Banking continued to execute on its strategy of transforming the customer experience through transaction channel migration, branch network and home lending process transformations and multi-channel engagement and service strategies. We are also continually assessing our current branch network for optimization opportunities as usage of alternative channels has increased and, as a result, we had a net closure of 111 branches in 2022, consistent with our plan.

Corporate & Institutional Banking

Corporate & Institutional Banking's strategy is to be the leading relationship-based provider of traditional banking products and services to its customers through the economic cycles. We aim to grow our market share and drive higher returns by delivering value-added solutions that help our clients better run their organizations, all while maintaining prudent risk and expense management. We continue to focus on building client relationships where the risk-return profile is attractive.

Table 13: Corporate & Institutional Banking Table

(Unaudited) Year ended December 31 Dollars in millions	2022	2021	Change $	Change %
Income Statement				
Net interest income	$ 5,270	$ 4,571	$ 699	15 %
Noninterest income	3,621	3,783	(162)	(4)%
Total revenue	8,891	8,354	537	6 %
Provision for (recapture of) credit losses	198	(646)	844	*
Noninterest expense	3,651	3,479	172	5 %
Pretax earnings	5,042	5,521	(479)	(9)%
Income taxes	1,155	1,183	(28)	(2)%
Noncontrolling interests	17	14	3	21 %
Earnings	$ 3,870	$ 4,324	$ (454)	(10)%
Average Balance Sheet				
Loans held for sale	$ 475	$ 583	$ (108)	(19)%
Loans				
Commercial				
Commercial and industrial	$ 155,551	$ 126,928	$ 28,623	23 %
Commercial real estate	33,373	31,584	1,789	6 %
Equipment lease financing	6,195	6,286	(91)	(1)%
Total commercial	195,119	164,798	30,321	18 %
Consumer	9	13	(4)	(31)%
Total loans	$ 195,128	$ 164,811	$ 30,317	18 %
Total assets	$ 219,941	$ 188,470	$ 31,471	17 %
Deposits				
Noninterest-bearing demand	$ 76,956	$ 79,109	$ (2,153)	(3)%
Interest-bearing demand	71,388	72,210	(822)	(1)%
Total deposits	$ 148,344	$ 151,319	$ (2,975)	(2)%
Performance Ratios				
Return on average assets	1.76 %	2.29 %		
Noninterest income to total revenue	41 %	45 %		
Efficiency	41 %	42 %		
Other Information				
Consolidated revenue from: (a)				
Treasury Management (b)	$ 2,801	$ 2,169	$ 632	29 %
Commercial mortgage banking activities:				
Commercial mortgage loans held for sale (c)	$ 77	$ 145	$ (68)	(47)%
Commercial mortgage loan servicing income (d)	256	334	(78)	(23)%
Commercial mortgage servicing rights valuation, net of economic hedge	138	80	58	73 %
Total	$ 471	$ 559	$ (88)	(16)%
MSR asset value (e)	$ 1,113	$ 740	$ 373	50 %
Average Loans by C&IB business				
Corporate Banking	$ 104,798	$ 81,069	$ 23,729	29 %
Real Estate	45,335	42,936	2,399	6 %
Business Credit	28,461	24,047	4,414	18 %
Commercial Banking	9,294	12,054	(2,760)	(23)%
Other	7,240	4,705	2,535	54 %
Total average loans	$ 195,128	$ 164,811	$ 30,317	18 %
Credit-related statistics				
Nonperforming assets (e)	$ 761	$ 1,007	$ (246)	(24)%
Net charge-offs - loans and leases	$ 143	$ 289	$ (146)	(51)%

* - Not Meaningful

(a) See the additional revenue discussion regarding treasury management and commercial mortgage banking activities in the Product Revenue section of this Corporate & Institutional Banking section.

(b) Amounts are reported in net interest income and noninterest income.

(c) Represents commercial mortgage banking income for valuations on commercial mortgage loans held for sale and related commitments, derivative valuations, origination fees, gains on sale of loans held for sale and net interest income on loans held for sale.

(d) Represents net interest income and noninterest income from loan servicing, net of reduction in commercial mortgage servicing rights due to amortization expense and payoffs. Commercial mortgage servicing rights valuation, net of economic hedge is shown separately.

(e) As of December 31.

Corporate & Institutional Banking earnings decreased $454 million in 2022 compared with 2021, driven by a higher provision for credit losses, higher noninterest expense and lower noninterest income, partially offset by higher net interest income.

Net interest income increased in the comparison primarily due to higher average loan balances reflecting organic growth and the full-year benefit of BBVA, as well as wider interest rate spreads on the value of deposits, partially offset by narrower interest rate spreads on the value of loans and lower average deposit balances.

Noninterest income decreased in the comparison driven by lower capital markets and advisory fees and lower commercial mortgage banking activities, partially offset by higher treasury management product revenue.

Provision for credit losses was driven by our weakened economic outlook along with loan growth, partially offset by the impacts from the reassessment of pandemic-related risks and credit quality improvement in the portfolio.

Noninterest expense increased in the comparison largely due to a full-year of BBVA operating expenses and continued investments to support business growth, partially offset by lower variable compensation associated with decreased business activity.

Average loans increased compared with 2021 due to increases in Corporate Banking, Business Credit and Real Estate, partially offset by a decline in Commercial Banking:

- Corporate Banking provides lending, equipment finance, treasury management and capital markets products and services to mid-sized and large corporations and government, and not-for-profit entities. Average loans for this business increased, driven by strong new production and higher average utilization of loan commitments as well as the full-year benefit of loans from BBVA.
- Business Credit provides asset-based lending and equipment financing solutions. The loan and lease portfolio is relatively high yielding, with acceptable risk as the loans are mainly secured by business assets. Average loans for this business increased, primarily driven by higher utilization of loan commitments and new production.
- Real Estate provides banking, financing, and servicing solutions for commercial real estate clients across the country. Average loans for this business increased reflecting new production, partially offset by lower average utilization of loan commitments.
- Commercial Banking provides lending, treasury management and capital markets products and services to smaller corporations and businesses. Average loans for this business decreased, primarily driven by PPP loan forgiveness, partially offset by the full-year benefit of loans from BBVA.

The deposit strategy of Corporate & Institutional Banking is to remain disciplined on pricing and focused on growing and retaining relationship-based balances over time, executing on customer and segment-specific deposit growth strategies and continuing to provide funding and liquidity to PNC. Average total deposits decreased in the comparison reflecting the impact of competitive pricing dynamics, partially offset by the full-year benefit of deposits from BBVA. We continue to actively monitor the interest rate environment and make adjustments to our deposit strategy in response to evolving market conditions, bank funding needs and client relationship dynamics.

In 2021, the BBVA acquisition accelerated Corporate & Institutional Banking’s geographic expansion. Following the BBVA acquisition and our de novo expansion efforts, we are now a coast-to-coast franchise and have a presence in the largest 30 U.S. metropolitan statistical areas. These expanded locations complement Corporate & Institutional Banking’s national businesses with a significant presence in these cities, and our full suite of commercial products and services is now offered nationally.

Product Revenue

In addition to credit and deposit products for commercial customers, Corporate & Institutional Banking offers other services, including treasury management, capital markets and advisory products and services, and commercial mortgage banking activities, for customers of all business segments. On a consolidated basis, the revenue from these other services is included in net interest income and noninterest income, as appropriate. From a business perspective, the majority of the revenue and expense related to these services is reflected in the Corporate & Institutional Banking segment results, and the remainder is reflected in the results of other businesses where the customer relationship exists. The Other Information section in Table 13 includes the consolidated revenue to PNC for treasury management and commercial mortgage banking services. A discussion of the consolidated revenue from these services follows.

The Treasury Management business provides corporations with cash and investment management services, receivables and disbursement management services, funds transfer services, international payment services and access to online/mobile information management and reporting services. Treasury management revenue is reported in noninterest income and net interest income. Noninterest income includes treasury management product revenue less earnings credits provided to customers on compensating deposit balances used to pay for products and services. Net interest income primarily includes revenue from all treasury management customer deposit balances. Compared with 2021, treasury management revenue increased due to wider interest rate spreads on the value of deposits and higher noninterest income, reflecting the impact of customer growth and the full-year benefit of BBVA.

Commercial mortgage banking activities include revenue derived from commercial mortgage servicing (both net interest income and noninterest income), revenue derived from commercial mortgage loans held for sale and hedges related to those activities. Total revenue from commercial mortgage banking activities decreased in the comparison primarily due to lower commercial mortgage servicing income and commercial mortgage loans held for sale, partially offset by a higher benefit from commercial mortgage servicing rights valuation, net of economic hedge.

Capital markets and advisory includes services and activities primarily related to merger and acquisition advisory, equity capital markets advisory, asset-backed financing, loan syndication, securities underwriting and customer-related trading. The decrease in capital markets and advisory fees in the comparison was mostly driven by lower advisory and underwriting fees, partially offset by higher fees on customer-related derivative activities.

Asset Management Group

The Asset Management Group strives to be the leading relationship-based provider of investment, planning, credit and cash management solutions and fiduciary services to affluent individuals and institutions by endeavoring to proactively deliver value-added ideas, solutions and exceptional service. Asset Management Group's priorities are to serve our clients' financial objectives, grow and deepen customer relationships and deliver solid financial performance with prudent risk and expense management.

Table 14: Asset Management Group Table

(Unaudited) Year ended December 31 Dollars in millions, except as noted	2022	2021	Change $	Change %
Income Statement				
Net interest income	$ 608	$ 476	$ 132	28 %
Noninterest income	936	987	(51)	(5)%
Total revenue	1,544	1,463	81	6 %
Provision for (recapture of) credit losses	28	(7)	35	*
Noninterest expense	1,086	941	145	15 %
Pretax earnings	430	529	(99)	(19)%
Income taxes	100	123	(23)	(19)%
Earnings	$ 330	$ 406	$ (76)	(19)%
Average Balance Sheet				
Loans				
Consumer				
Residential real estate	$ 8,029	$ 5,033	$ 2,996	60 %
Other consumer	4,550	4,321	229	5 %
Total consumer	12,579	9,354	3,225	34 %
Commercial	1,505	1,746	(241)	(14)%
Total loans	$ 14,084	$ 11,100	$ 2,984	27 %
Total assets	$ 14,505	$ 11,677	$ 2,828	24 %
Deposits				
Noninterest-bearing	$ 2,664	$ 2,919	$ (255)	(9)%
Interest-bearing	27,830	22,782	5,048	22 %
Total deposits	$ 30,494	$ 25,701	$ 4,793	19 %
Performance Ratios				
Return on average assets	2.28 %	3.48 %		
Noninterest income to total revenue	61 %	67 %		
Efficiency	70 %	64 %		
Supplemental Noninterest Income Information				
Asset management fees	$ 908	$ 964	$ (56)	(6)%
Brokerage fees	8	9	(1)	(11)%
Total	$ 916	$ 973	$ (57)	(6)%
Other Information				
Nonperforming assets (a)	$ 56	$ 62	$ (6)	(10)%
Net charge-offs - loans and leases	$ 17	$ 2	$ 15	750 %
Brokerage account client assets (in billions) (a)	$ 4	$ 5	$ (1)	(20)%
Client Assets Under Administration (in billions) (a) (b)				
Discretionary client assets under management	$ 173	$ 192	$ (19)	(10)%
Nondiscretionary client assets under administration	152	175	(23)	(13)%
Total	$ 325	$ 367	$ (42)	(11)%
Discretionary client assets under management				
PNC Private Bank	$ 105	$ 123	$ (18)	(15)%
Institutional Asset Management	68	69	(1)	(1)%
Total	$ 173	$ 192	$ (19)	(10)%

* - Not Meaningful
(a) As of December 31.
(b) Excludes brokerage account client assets.

The Asset Management Group consists of two primary businesses: PNC Private Bank and Institutional Asset Management.

The PNC Private Bank is focused on being a premier private bank in each of the markets it serves. This business seeks to deliver high quality banking, trust, and investment management services to our emerging affluent, high net worth, and ultra-high net worth clients through a broad array of products and services.

Institutional Asset Management provides outsourced chief investment officer, custody, private real estate, cash and fixed income client solutions, and retirement plan fiduciary investment services to institutional clients, including corporations, healthcare systems, insurance companies, unions, municipalities and non-profits.

With the inclusion of BBVA, PNC Private Bank has approximately 100 offices operating in nine of the ten most affluent states in the U.S. with a majority co-located within retail banking branches.

Asset Management Group earnings decreased $76 million in 2022 compared with 2021, driven by an increase in noninterest expense, lower noninterest income and a higher provision for credit losses, partially offset by higher net interest income.

Net interest income increased due to growth in average loan and deposit balances, reflecting the full-year benefit of the BBVA acquisition and organic growth, as well as wider interest rate spreads on the value of deposits. This was partially offset by narrower interest rate spreads on the value of loans.

Noninterest income decreased in the comparison primarily attributable to lower average equity markets.

Noninterest expense increased due to the full-year impact of BBVA operations and continued investments to support business growth.

Discretionary client assets under management decreased in comparison to the prior year primarily attributable to lower equity markets as of December 31, 2022.

RISK MANAGEMENT

Enterprise Risk Management

We encounter risk as part of the normal course of operating our business. Accordingly, we design our risk governance framework, referred to as the ERM Framework, and risk management processes to help manage this risk. We manage risk in light of our risk appetite to optimize long-term shareholder value while supporting our employees, customers and communities.

Our ERM Framework is structurally aligned with regulatory enhanced prudential standards and heightened standards promulgated by the Federal Reserve and OCC, respectively, which establish minimum requirements for the design and implementation of a risk governance framework. This Risk Management section describes our ERM Framework, which consists of seven core components that provide executive management and the Board of Directors with an aggregate view of significant risks impacting the organization. The seven core components are risk culture, enterprise strategy (including risk appetite, strategic planning, capital planning and stress testing), risk governance and oversight, risk identification, risk assessments, risk controls and monitoring, and risk aggregation and reporting (see the figure below). The overall Risk Management section of this Item 7 also provides an analysis of the firm's Capital Management and our key areas of risk, which include, but are not limited to Credit, Market, Liquidity and Operational (including Compliance and Information Security). Our use of financial derivatives as part of our overall asset and liability risk management process is also addressed within this Risk Management section.

We operate within a rapidly evolving regulatory environment. Accordingly, we are actively focused on the timely incorporation of applicable regulatory pronouncements into our ERM Framework.

Risk Culture
A strong risk culture helps us make well informed decisions, helps ensure individuals conform to the established culture, reduces an individual's ability to do something for personal gain, and rewards employees for working toward a common goal rather than individual interests. Our risk culture reinforces the appropriate protocols for responsible and ethical behavior. These protocols are especially critical in terms of our risk awareness, risk-taking behavior and risk management practices.

Managing risk is every employee's responsibility. All of our employees, individually and collectively, are responsible for ensuring the organization is performing with the utmost integrity, is applying sound risk management practices and is striving to achieve our stated objectives. All employees are also responsible for understanding our Enterprise Risk Appetite Statement, the ERM Framework and how risk management applies to their respective roles and responsibilities. Employees are encouraged to collaborate across groups to identify and mitigate risks and elevate issues as required. We reinforce risk management responsibilities through a performance management system where employee performance goals include risk management objectives and incentives for employees to reinforce balanced measures of risk-adjusted performance.

Proactive and open communication, between groups and up to the Board of Directors, facilitates timely identification and resolution of risk issues. Our multi-level risk committee structure provides formal channels to identify and report risk.

Enterprise Strategy
We seek to ensure that our overall enterprise strategy is within acceptable risk parameters through our risk appetite, strategic planning, capital planning and stress testing processes. These components are reviewed and approved at least annually by the Board of Directors or one of its committees.

> *Risk Appetite*: Our risk appetite represents the organization's desired enterprise risk position, set within our capital-based risk and liquidity capacity to achieve our strategic objectives and business plans. The Enterprise Risk Appetite Statement qualitatively describes the aggregate level of risk we are willing to accept in order to execute our business strategies. Qualitative guiding principles further define each of the risks within our taxonomy to support the risk appetite statement. Risk appetite metrics and limits, including forward-looking metrics, quantitatively measure whether we are operating within our stated Risk Appetite. Our risk appetite metrics reflect material risks, align with our established Risk Appetite Framework, balance risk and reward, leverage analytics, and are adjusted to changes in the external and internal risk environments.

> *Strategic Planning*: Our enterprise and line of business strategic plans outline major objectives, strategies and goals which are expected to be achieved over the next five years while seeking to ensure we remain compliant with all capital, risk appetite and liquidity targets and guidelines. Our chief executive officer and chief financial officer lead the development of the corporate strategic plan.

> *Capital Planning and Stress Testing*: Capital planning helps to ensure we are maintaining safe and sound operations and viability. The capital planning process and the resulting capital plan evolve as our overall risks, activities and risk management practices change. Capital planning aligns with our strategic planning process. Stress testing is an essential element of the macroeconomics capital planning process. Effective stress testing enables us to consider the estimated effect on capital of various hypothetical scenarios.

Risk Governance and Oversight
We employ a comprehensive risk management governance framework to help ensure that risks are identified, balanced decisions are made that consider risk and return and risks are adequately monitored and managed. Risk committees established within this risk governance and oversight framework provide oversight for risk management activities at the Board of Directors, executive, corporate

and business levels. Committee composition is designed to provide effective oversight balanced across the three lines of defense in accordance with the OCC's heightened standards and the Federal Reserve Board's enhanced prudential standards. See the Supervision and Regulation section in Item 1 of this Report for more information.

To ensure appropriate risks are being taken and effectively managed and controlled, risk is managed across three lines of defense. The Board of Directors' and each line of defense's responsibilities are detailed below:

Board of Directors – The Board of Directors oversees our risk-taking activities, holds management accountable for adhering to the ERM Framework and is responsible for exercising sound, independent judgment when assessing risk.

First line of defense – The front line units are accountable for identifying, owning and managing risks to within acceptable levels while adhering to the ERM Framework. Our businesses strive to enhance risk management and internal control processes within their areas. Integrated and comprehensive processes are designed to adequately manage the business' risk profile and risk appetite through identifying, assessing, monitoring and reporting risks that may significantly impact each business.

Second line of defense – The second line of defense is independent from the first line of defense and is responsible for establishing the risk governance framework and the standards within each independent risk area for identifying, measuring, monitoring, controlling and reporting aggregate risks. As the second line of defense, the independent risk areas monitor the risks generated by the first line of defense, review and challenge the implementation of effective risk management practices, and report on issues or exceptions. The risk areas help to ensure processes and controls owned by the businesses are designed and operating as intended.

Third line of defense – As the third line of defense, Internal Audit is independent from the first and second lines of defense. Internal Audit provides the Board of Directors and executive management comprehensive assurance on the effectiveness of the ERM Framework and the risk management practices across the organization.

Within the three lines of defense, the independent risk organization has sufficient authority to influence material decisions. Our business oversight and decision-making is supported through a governance structure at the Board of Directors and management level. Specific responsibilities include:

Board of Directors – Our Board of Directors oversees our business and affairs as managed by our officers and employees. The Board of Directors may receive assistance in carrying out its duties and may delegate authority through standing or special committees. The following provides a summary of some of the key responsibilities of the Board's standing committees:

- *Audit Committee*: monitors the integrity of our consolidated financial statements; monitors internal control over financial reporting; monitors compliance with our code of ethics; evaluates and monitors the qualifications and independence of our independent auditors; and evaluates and monitors the performance of our Internal Audit function and our independent auditors.
- *Nominating and Governance Committee*: oversees the implementation of sound corporate governance principles and practices while promoting our best interests and those of our shareholders.
- *Human Resources Committee*: oversees the compensation of our executive officers and other specified responsibilities related to talent and human capital matters affecting us. The committee is also responsible for evaluating the relationship between risk-taking activities and incentive compensation plans.
- *Risk Committee*: oversees our enterprise-wide risk structure and the processes established to identify, measure, monitor and manage the organization's risks and evaluates and approves our risk governance framework. The Risk Committee has formed a Compliance Subcommittee to facilitate Board-level oversight of risk management in the compliance area.
- *Special Committee on Equity & Inclusion*: oversees management's equity and inclusion efforts, internally and externally, focusing on our systemic processes (including for employees and suppliers); low- and moderate-income communities (including community development banking, and product offerings and financial support for such communities); and advocacy (including partnerships with leading organizations, and advocacy for necessary structural changes to help provide greater access to the banking system and end systemic racism).
- *Technology Committee*: oversees technology strategy and significant technology initiatives and programs, including those that can position the use of technology to drive strategic advantages, and fulfills the oversight responsibilities delegated from the Risk Committee with respect to technology risk, technology risk management, cybersecurity, information security, business continuity and significant technology initiatives and programs.

Management Level Executive Committee – The Management Level Executive Committee is responsible for guiding the creation and execution of our business strategy across the company. With this responsibility, the Management Level Executive Committee executes various strategic approval and review activities, with a focus on capital deployment, business performance and risk management. This Committee also helps ensure PNC is staffed with sufficient resources and talent to operate within its risk appetite.

Corporate Committees – The Corporate Committees generally operate based on the delegated approval authority from a Board-level Committee, the Management Level Executive Committee or other Corporate Committees. These Committees operate at the senior management level and are designed to facilitate the review, evaluation, oversight and approval of key business and risk activities.

Working Committees – Working Committees generally operate on delegated approval authority from a Corporate Committee or other Working Committees. Working Committees are intended to provide oversight of regulatory/legal matters, assist in the implementation of key enterprise-level activities within a business or function and support the oversight of key risk activities.

Transactional Committees – Transactional Committees generally operate based on delegated approval authority from a Corporate or Working Committee to approve individual transactions, transactional related activities or movements on the organization's balance sheet.

Policies and Procedures – We have established risk management Policies and Procedures to support our ERM Framework, articulate our risk culture, define the parameters and processes within which employees are to manage risk and conduct our business activities and to provide direction, guidance and clarity on roles and responsibilities to management and the Board of Directors. These Policies and Procedures are organized in a multi-tiered framework and require periodic review and approval by relevant Committees, including where appropriate Committees of the Board of Directors, or management.

Risk Identification

Risk identification takes place across a variety of risk types throughout the organization. These risk types include, but are not limited to, credit, liquidity and capital, market and operational (which includes, among other types of risk, compliance and information security). Risks are identified based on a balanced use of analytical tools and management judgment for both on- and off-balance sheet exposures. Our governance structure supports risk identification by facilitating assessment of key risk issues, emerging risks and idiosyncratic risks and implementation of mitigation strategies as appropriate. These risks are prioritized based on quantitative and qualitative analysis and assessed against our risk appetite. Multiple tools and approaches are used to help identify and prioritize risks, including Risk Appetite Metrics, Key Risk Indicators, Key Performance Indicators, Risk and Control Self-Assessments, scenario analysis, stress testing and special investigations.

Risks are aggregated and assessed within and across risk functions and businesses. The aggregated risk information is reviewed and reported at an enterprise level to the Board of Directors or appropriate committees. This enterprise aggregation and reporting approach promotes the identification and appropriate escalation of material risks across the organization and supports an understanding of the cumulative impact of risk in relation to our risk appetite.

Risk Assessment

Once risks are identified, they are evaluated based on quantitative and qualitative analysis to determine whether they are material. Risk assessments support the overall management of an effective ERM Framework and help us to control and monitor our actual risk level and risk management effectiveness. Comprehensive, accurate and timely assessments of risk are essential to an effective ERM Framework. Effective risk measurement practices are designed to uncover recurring risks that have been experienced in the past; facilitate the monitoring, understanding, analysis and reporting of known risks; and reveal unanticipated risks that may not be easy to understand or predict.

Risk Controls and Monitoring

Our ERM Framework consists of policies, processes, personnel and control systems. Risk controls and limits provide the linkage from our Risk Appetite Statement and associated guiding principles to the risk-taking activities of our businesses. In addition to risk appetite limits, a system of more detailed internal controls exists which oversees and monitors our various processes and functions. These control systems measure performance, help employees make correct decisions, help ensure information is accurate and reliable and facilitate compliance with laws and regulations.

We design our monitoring and evaluation of risks and controls to provide assurance that policies, procedures and controls are effective and also to result in the identification of control improvement recommendations. Risk monitoring is a daily, ongoing process used by both the first and second line of defense to help ensure compliance with our ERM Framework. Risk monitoring is accomplished in many ways, including performing risk assessments at the business and risk assessment unit level, monitoring an area's key controls, the timely reporting of issues and establishing a quality control and/or quality assurance function, as applicable.

Risk Aggregation and Reporting

Risk reporting is a comprehensive way to: (i) communicate aggregate risks, including identified concentrations; (ii) escalate instances where we are outside of our risk appetite; (iii) monitor our risk profile in relation to our risk appetite; and (iv) communicate risks and views on the effectiveness of our risk management activities to the Board of Directors and executive management.

Risk reports are produced at the line of business, functional risk and enterprise levels. Each individual risk report includes an assessment of inherent risk, quality of risk management, residual risk, risk appetite and risk outlook. The enterprise level risk report aggregates material risks identified in the risk area reports and in the business reports to define the enterprise risk profile. The enterprise risk profile is a point-in-time assessment of enterprise risk and represents our overall risk position in relation to the desired enterprise risk appetite. The determination of the enterprise risk profile is based on analysis of quantitative reporting of risk limits and other measures along with qualitative assessments. Quarterly aggregation of risk reports from the risk areas and lines of business is designed to provide a clear view of our risk level relative to our quantitative risk appetite. The enterprise level report is provided through the governance structure to the Risk Committee of the Board of Directors.

Credit Risk Management

Credit risk represents the possibility that a customer, counterparty or issuer may not perform in accordance with the contractual terms of their loan, extension of credit or other financial obligation with PNC. Credit risk is inherent in the financial services business and results from extending credit to customers, purchasing securities and entering into financial derivative transactions and certain guarantee contracts. Credit risk is one of our most significant risks. Our processes for managing credit risk are designed to be embedded in our risk culture and in our decision-making processes using a systematic approach whereby credit risks and related exposures are identified and assessed, managed through specific policies and processes, measured and evaluated against our risk appetite and credit concentration limits, and reported, along with specific mitigation activities, to management and the Board of Directors through our governance structure. Our most significant concentration of credit risk is in our loan portfolio.

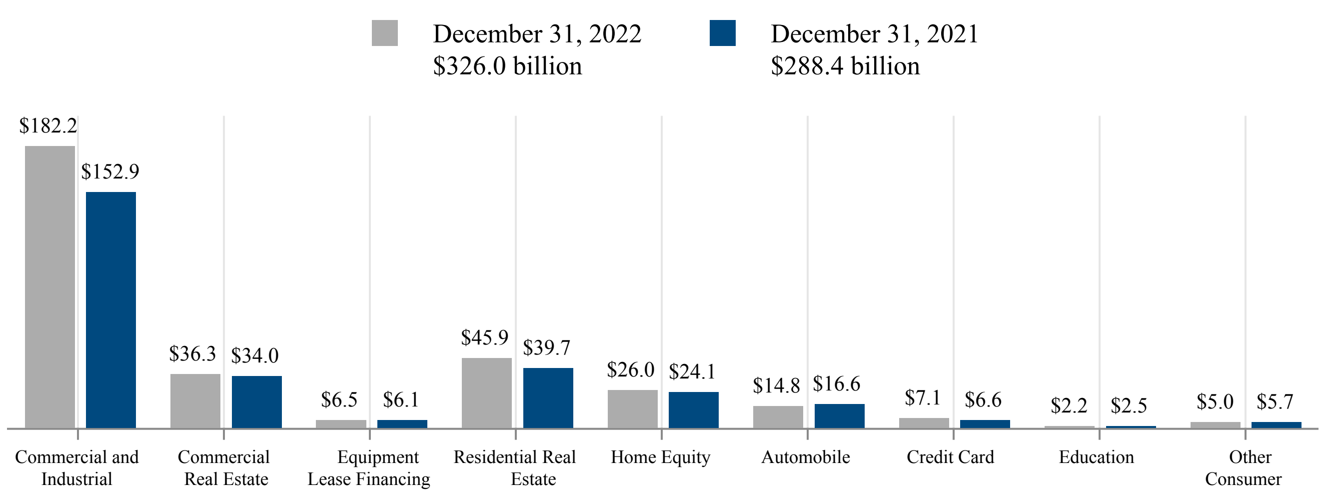
Credit Risk Management employs a governance, policy and monitoring framework for environmental and social risk topics that may include updates to PNC's Credit Portfolio Strategy Committee. Outcomes from those updates may be incorporated into credit policies and risk procedures that govern our risk appetite, credit decisioning, portfolio management and reserve processes.

Credit Risk Management is currently working to understand, and incorporate into our credit risk management framework, the impacts to credit risk that may accelerate or be introduced as a result of climate change, including impacts from physical risk events and risks associated with the transition to a low-carbon economy. These risk events may impact a borrower's income, cash flow or collateral due to frequency or severity of weather events, changing market conditions, consumer preferences and demand for products, or changes to the legislative and regulatory landscape. As disruptive events occur, PNC follows a process to determine if enhanced portfolio monitoring, reporting and executive communication is warranted to ensure appropriate oversight and action.

To address environmental and social-related risks, including climate change, PNC limits new originations in sectors that are no longer consistent with our strategic direction, such as mountain-top mining, Arctic oil and gas and private prisons. Corporate & Institutional Banking transactions may be subjected to an Environmental and Social Risk Management assessment designed to help us better identify and mitigate environmental, human rights and other social risks early in the credit application process. Transactions identified as having a potential environmental, human rights or other social risk are evaluated to determine whether enhanced due diligence is warranted. Additionally, PNC strives to ensure flood insurance is present for properties as required by applicable regulations, while also monitoring other water-related risks (such as the increased shoreline (and coastal) erosion) and weather-related events (such as hurricanes and wildfires).

Loan Portfolio Characteristics and Analysis

Table 15: Details of Loans
In billions



We use several credit quality indicators, as further detailed in Note 4 Loans and Related Allowance for Credit Losses, to monitor and measure our exposure to credit risk within our loan portfolio. The following provides additional information about the significant loan classes that comprise our Commercial and Consumer portfolio segments.

Commercial

Commercial and Industrial

Commercial and industrial loans comprised 56% and 53% of our total loan portfolio at December 31, 2022 and 2021, respectively. The majority of our commercial and industrial loans are secured by collateral that provides a secondary source of repayment for the loan should the borrower experience cash generation difficulties. Examples of this collateral include short-term assets, such as accounts receivable, inventory and securities, and long-lived assets, such as equipment, owner-occupied real estate and other business assets.

We actively manage our commercial and industrial loans to assess any changes (both positive and negative) in the level of credit risk at both the borrower and portfolio level. To evaluate the level of credit risk, we assign internal risk ratings reflecting our estimates of the borrower's PD and LGD for each related credit facility. This two-dimensional credit risk rating methodology provides granularity in the risk monitoring process and is updated on an ongoing basis through our credit risk management processes. In addition to monitoring the level of credit risk, we also monitor concentrations of credit risk pertaining to both specific industries and geographies that may exist in our portfolio. Our commercial and industrial portfolio is well-diversified across industries as shown in the following table which provides a breakout by industry classification (classified based on the North American Industry Classification System).

Table 16: Commercial and Industrial Loans by Industry

	December 31, 2022		December 31, 2021	
Dollars in millions	Amount	% of Total	Amount	% of Total
Commercial and industrial				
Manufacturing	$ 30,845	17 %	$ 22,597	15 %
Retail/wholesale trade	29,176	16	22,803	15
Service providers	23,548	13	20,750	14
Financial services	21,320	12	17,950	12
Real estate related (a)	17,780	10	15,123	10
Technology, media & telecommunications	11,845	7	10,070	7
Health care	10,649	6	9,944	7
Transportation and warehousing	7,858	4	7,136	5
Other industries	29,198	15	26,560	15
Total commercial and industrial loans	$ 182,219	100 %	$ 152,933	100 %

(a) Represents loans to customers in the real estate and construction industries.

Commercial and industrial loan growth from December 31, 2021 was driven by new production and higher utilization of loan commitments, partially offset by PPP loan forgiveness. PPP loans outstanding totaled $0.4 billion and $3.4 billion at December 31, 2022 and 2021, respectively.

Commercial Real Estate

Commercial real estate loans comprised $22.3 billion related to commercial mortgages on income-producing properties, $6.4 billion of real estate construction project loans and $7.6 billion of intermediate term financing loans as of December 31, 2022. Comparable amounts as of December 31, 2021 were $18.6 billion, $7.3 billion and $8.1 billion, respectively.

We monitor credit risk associated with our commercial real estate loans similar to commercial and industrial loans by analyzing PD and LGD. Additionally, risks associated with these types of credit activities tend to be correlated to the loan structure, collateral location and quality, project progress and business environment. These attributes are also monitored and utilized in assessing credit risk. The portfolio is geographically diverse due to the nature of our business involving clients throughout the U.S.

The following table presents our commercial real estate loans by geography and property type:

Table 17: Commercial Real Estate Loans by Geography and Property Type

	December 31, 2022		December 31, 2021	
Dollars in millions	Amount	% of Total	Amount	% of Total
Geography (a)				
California	$ 6,224	17 %	$ 5,561	16 %
Texas	3,871	11	3,458	10
Florida	3,275	9	2,987	9
Pennsylvania	1,638	5	1,482	4
Virginia	1,638	5	1,720	5
Maryland	1,496	4	1,557	5
Colorado	1,336	4	1,126	3
Illinois	1,321	4	970	3
Ohio	1,236	3	1,219	4
North Carolina	1,150	3	823	2
Other	13,131	35	13,112	39
Total commercial real estate loans	$ 36,316	100 %	$ 34,015	100 %
Property Type (a)				
Multifamily	$ 13,738	38 %	$ 10,581	31 %
Office	9,123	25	9,547	28
Industrial/warehouse	4,035	11	2,413	7
Retail	2,855	8	3,570	10
Seniors housing	2,228	6	2,602	8
Hotel/motel	1,896	5	2,008	6
Mixed use	701	2	724	2
Other	1,740	5	2,570	8
Total commercial real estate loans	$ 36,316	100 %	$ 34,015	100 %

(a) Presented in descending order based on loan balances at December 31, 2022.

As remote work continues to be a feasible alternative and notable portions of leased space remain unoccupied, real estate related to the office sector is an area of continuing uncertainty. Evolving conditions suggest a structural change for office demand moving forward; however, the change is anticipated to develop more fully over time. PNC continues to closely monitor our exposure in the office sector as these concerns develop, and while internal risk and regulatory classification assessments have weakened, we have not seen a notable change in loan performance at this time.

Consumer

Residential Real Estate

Residential real estate loans primarily consisted of residential mortgage loans at both December 31, 2022 and 2021.

We obtain loan attributes at origination, including FICO scores and LTVs, and we update these and other credit metrics at least quarterly. We track borrower performance monthly. We also segment the mortgage portfolio into pools based on product type (*e.g.*, nonconforming or conforming). This information is used for internal reporting and risk management. As part of our overall risk analysis and monitoring, we also segment the portfolio based upon loan delinquency, nonperforming status, modification and bankruptcy status, FICO scores, LTV and geographic concentrations. Loan performance is evaluated by source originators and loan servicers.

The following table presents certain key statistics related to our residential real estate portfolio:

Table 18: Residential Real Estate Loan Statistics

	December 31, 2022		December 31, 2021	
Dollars in millions	Amount	% of Total	Amount	% of Total
Geography (a)				
California	$ 18,609	41 %	$ 15,041	38 %
Texas	4,194	9	4,397	11
Florida	3,360	7	3,124	8
Washington	3,009	7	1,909	5
New Jersey	1,925	4	1,660	4
New York	1,558	3	1,279	3
Arizona	1,436	3	1,435	4
Colorado	1,192	3	1,145	3
Pennsylvania	1,188	3	1,069	3
Illinois	970	2	957	2
Other	8,448	18	7,696	19
Total residential real estate loans	$ 45,889	100 %	$ 39,712	100 %

	December 31, 2022	December 31, 2021
Weighted-average loan origination statistics (b)		
Loan origination FICO score	770	775
LTV of loan originations	71 %	67 %

(a) Presented in descending order based on loan balances at December 31, 2022.
(b) Weighted-averages calculated for the twelve months ended December 31, 2022 and 2021, respectively.

We originate residential mortgage loans nationwide through our national mortgage business as well as within our branch network. Residential mortgage loans underwritten to agency standards, including conforming loan amount limits, are typically sold with servicing retained by us. We also originate nonconforming residential mortgage loans that do not meet agency standards, which we retain on our balance sheet. Our portfolio of originated nonconforming residential mortgage loans totaled $40.6 billion at December 31, 2022 with 44% located in California. Comparable amounts at December 31, 2021 were $34.9 billion and 42%, respectively.

<u>Home Equity</u>
Home equity loans comprised $19.5 billion of primarily variable-rate home equity lines of credit and $6.5 billion of closed-end home equity installment loans at December 31, 2022. Comparable amounts were $15.8 billion and $8.3 billion as of December 31, 2021, respectively.

Similar to residential real estate loans, we track borrower performance of this portfolio on a monthly basis. We also segment the population into pools based on product type (*e.g.*, home equity loans, brokered home equity loans, home equity lines of credit or brokered home equity lines of credit) and track the historical performance of any related mortgage loans regardless of whether we hold such liens. This information is used for internal reporting and risk management. As part of our overall risk analysis and monitoring, we also segment the portfolio based upon loan delinquency, nonperforming status, modification and bankruptcy status, FICO scores, LTV, lien position and geographic concentration.

The credit performance of the majority of the home equity portfolio where we hold the first lien position is superior to the portion of the portfolio where we hold the second lien position, but do not hold the first lien. Lien position information is generally determined at the time of origination and monitored on an ongoing basis for risk management purposes. We use a third-party service provider to obtain updated loan information, including lien and collateral data that is aggregated from public and private sources.

The following table presents certain key statistics related to our home equity portfolio:

Table 19: Home Equity Loan Statistics

	December 31, 2022		December 31, 2021	
Dollars in millions	Amount	% of Total	Amount	% of Total
Geography (a)				
Pennsylvania	$ 5,051	19 %	$ 5,108	21 %
New Jersey	3,266	13	3,117	13
Ohio	2,352	9	2,398	10
Florida	2,082	8	1,701	7
Michigan	1,263	5	1,246	5
Maryland	1,254	5	1,206	5
California	1,247	5	705	3
Texas	1,144	4	978	4
Illinois	1,126	4	1,154	5
North Carolina	995	4	918	4
Other	6,203	24	5,530	23
Total home equity loans	$ 25,983	100 %	$ 24,061	100 %
Lien type				
1st lien		58 %		62 %
2nd lien		42		38
Total		100 %		100 %
		December 31, 2022		December 31, 2021
Weighted-average loan origination statistics (b)				
Loan origination FICO score		774		782
LTV of loan originations		67 %		66 %

(a) Presented in descending order based on loan balances at December 31, 2022.
(b) Weighted-averages calculated for the twelve months ended December 31, 2022 and 2021, respectively.

Automobile
Auto loans comprised $13.7 billion in the indirect auto portfolio and $1.1 billion in the direct auto portfolio as of December 31, 2022. Comparable amounts as of December 31, 2021 were $15.4 billion and $1.2 billion, respectively. The indirect auto portfolio consists of loans originated primarily through franchised dealers, including from expansion into new markets. This business is strategically aligned with our core retail banking business.

The following table presents certain key statistics related to our indirect and direct auto portfolios:

Table 20: Auto Loan Statistics

	December 31, 2022	December 31, 2021
Weighted-average loan origination FICO score (a) (b)		
Indirect auto	784	791
Direct auto	776	775
Weighted-average term of loan originations - in months (a)		
Indirect auto	73	72
Direct auto	63	62

(a) Weighted-averages calculated for the twelve months ended December 31, 2022 and 2021, respectively.
(b) Calculated using the auto enhanced FICO scale.

We continue to focus on borrowers with strong credit profiles as evidenced by the weighted-average loan origination FICO scores noted in Table 20. We offer both new and used auto financing to customers through our various channels. At December 31, 2022, the portfolio balance was composed of 50% new vehicle loans and 50% used vehicle loans. Comparable amounts at December 31, 2021 were 53% and 47%, respectively.

The auto loan portfolio’s performance is measured monthly, including updated collateral values that are obtained monthly and updated FICO scores that are obtained at least quarterly. For internal reporting and risk management, we analyze the portfolio by product channel and product type and regularly evaluate default and delinquency experience. As part of our overall risk analysis and monitoring, we segment the portfolio by geography, channel, collateral attributes and credit metrics which include FICO score, LTV and term.

Nonperforming Assets and Loan Delinquencies

Nonperforming Assets
Nonperforming assets include nonperforming loans and leases for which ultimate collectability of the full amount of contractual principal and interest is not probable and include nonperforming TDRs and PCD loans, OREO and foreclosed assets. Loans held for sale, certain government insured or guaranteed loans and loans accounted for under the fair value option are excluded from nonperforming loans. See Note 1 Accounting Policies for details on our nonaccrual policies.

The following table presents a summary of nonperforming assets by major category:

Table 21: Nonperforming Assets by Type

Dollars in millions	December 31, 2022	December 31, 2021	Change $	Change %
Nonperforming loans				
Commercial	$ 858	$ 1,168	$ (310)	(27)%
Consumer (a)	1,127	1,312	(185)	(14)%
Total nonperforming loans	1,985	2,480	(495)	(20)%
OREO and foreclosed assets	34	26	8	31%
Total nonperforming assets	$ 2,019	$ 2,506	$ (487)	(19)%
TDRs included in nonperforming loans	$ 699	$ 988	$ (289)	(29)%
Percentage of total nonperforming loans	35 %	40 %		
Nonperforming loans to total loans	0.61 %	0.86 %		
Nonperforming assets to total loans, OREO and foreclosed assets	0.62 %	0.87 %		
Nonperforming assets to total assets	0.36 %	0.45 %		
Allowance for loan and lease losses to nonperforming loans	239 %	196 %		
Allowance for credit losses to nonperforming loans (b)	274 %	223 %		

(a) Excludes most unsecured consumer loans and lines of credit, which are charged off after 120 to 180 days past due and are not placed on nonperforming status.
(b) Calculated excluding allowances for investment securities and other financial assets.

The following table provides details on the change in nonperforming assets for the years ended December 31, 2022 and 2021:

Table 22: Change in Nonperforming Assets

In millions	2022	2021
January 1	$ 2,506	$ 2,337
Acquired nonperforming assets (a)		880
New nonperforming assets	1,523	1,216
Charge-offs and valuation adjustments	(370)	(255)
Principal activity, including paydowns and payoffs	(868)	(1,023)
Asset sales and transfers to loans held for sale	(52)	(134)
Returned to performing status	(720)	(515)
December 31	$ 2,019	$ 2,506

(a) Represents the June 30, 2021 balance of nonperforming assets attributable to BBVA. Changes in this acquired portfolio for the six months ended December 31, 2021 are reflected in the appropriate category based on activity.

As of December 31, 2022, approximately 98% of total nonperforming loans were secured by collateral which lessened reserve requirements and is expected to reduce credit losses.

Within consumer nonperforming loans, residential real estate TDRs comprised 50% of total residential real estate nonperforming loans, while home equity TDRs comprised 31% of home equity nonperforming loans at December 31, 2022. Comparable amounts at December 31, 2021 were 42% and 36%, respectively. TDRs generally remain in nonperforming status until a borrower has made at least six consecutive months of both principal and interest payments under the modified terms or ultimate resolution occurs. Loans where borrowers have been discharged from personal liability through Chapter 7 bankruptcy and have not formally reaffirmed their loan obligations to us and loans to borrowers not currently obligated to make both principal and interest payments under the restructured terms are not returned to accrual status. See Troubled Debt Restructurings and Loan Modifications within this Credit Risk Management section for more information on how certain loans to borrowers experiencing COVID-19 related difficulties were treated prior to the expiration of CARES Act TDR relief.

Loan Delinquencies
We regularly monitor the level of loan delinquencies and believe these levels may be a key indicator of credit quality in our loan portfolio. Measurement of delinquency status is based on the contractual terms of each loan. Loans that are 30 days or more past due in terms of payment are considered delinquent. Loan delinquencies include government insured or guaranteed loans, loans accounted for under the fair value option and PCD loans. Amounts exclude loans held for sale.

We manage credit risk based on the risk profile of the borrower, repayment sources, underlying collateral, and other support given current events, economic conditions and expectations. We refine our practices to meet the changing environment resulting from rising inflation levels, supply chain disruptions, higher interest rates and secular changes fostered by the COVID-19 pandemic. To mitigate losses and enhance customer support, we have customer assistance, loan modification and collection programs that align with the CARES Act and subsequent interagency guidance. As a result, under the CARES Act credit reporting rules, certain loans modified due to COVID-19 related hardships are not being reported as past due as of December 31, 2022 and 2021 based on the contractual terms of the loan, even where borrowers may not be making payments on their loans during the modification period.

The following table presents a summary of accruing loans past due by delinquency status:

Table 23: Accruing Loans Past Due (a)

	Amount				% of Total Loans Outstanding	
			Change			
Dollars in millions	December 31, 2022	December 31, 2021	$	%	December 31, 2022	December 31, 2021
Early stage loan delinquencies						
Accruing loans past due 30 to 59 days	$ 747	$ 1,011	$ (264)	(26)%	0.23 %	0.35 %
Accruing loans past due 60 to 89 days	261	355	(94)	(26)%	0.08 %	0.12 %
Total early stage loan delinquencies	1,008	1,366	(358)	(26)%	0.31 %	0.47 %
Late stage loan delinquencies						
Accruing loans past due 90 days or more	482	619	(137)	(22)%	0.15 %	0.21 %
Total accruing loans past due	$ 1,490	$ 1,985	$ (495)	(25)%	0.46 %	0.69 %

(a) Past due loan amounts include government insured or guaranteed loans of $0.4 billion and $0.5 billion at December 31, 2022 and 2021, respectively.

The decrease in accruing loans past due from December 31, 2021 was the result of lower delinquencies in both the consumer and commercial portfolios.

Accruing loans past due 90 days or more continue to accrue interest because they are (i) well secured by collateral and are in the process of collection, (ii) managed in homogeneous portfolios with specified charge-off timeframes adhering to regulatory guidelines, or (iii) certain government insured or guaranteed loans. As such, they are excluded from nonperforming loans.

Troubled Debt Restructurings and Loan Modifications

Troubled Debt Restructurings
A TDR is a loan whose terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties. TDRs result from our loss mitigation activities and include rate reductions, principal forgiveness, postponement/reduction of scheduled amortization and extensions, which are intended to minimize economic loss and to avoid foreclosure or repossession of collateral. Additionally, TDRs also result from court-imposed concessions (*e.g.*, a Chapter 7 bankruptcy where the debtor is discharged from personal liability to us and a court approved Chapter 13 bankruptcy repayment plan). Prior to the expiration of TDR relief on January 1, 2022, PNC elected not to apply a TDR designation to loans that were restructured due to a COVID-19 hardship pursuant to specific criteria under the CARES Act. Consistent with the expiration of this relief, loans that experience a COVID-19 related hardship and are restructured after January 1, 2022 are subject to existing GAAP guidance related to TDRs.

The following table provides a summary of troubled debt restructurings at December 31, 2022 and 2021, respectively:

Table 24: Summary of Troubled Debt Restructurings (a)

			Change	
Dollars in millions	December 31, 2022	December 31, 2021	$	%
Commercial	$ 561	$ 672	$ (111)	(17)%
Consumer	841	919	(78)	(8)%
Total TDRs	$ 1,402	$ 1,591	$ (189)	(12)%
Nonperforming	$ 699	$ 988	$ (289)	(29)%
Accruing (b)	703	603	100	17%
Total TDRs	$ 1,402	$ 1,591	$ (189)	(12)%

(a) Amounts in table do not include associated valuation allowances.
(b) Accruing loans include consumer credit card loans and certain loans that have demonstrated a period of at least six months of performance under the restructured terms and are excluded from nonperforming loans.

Nonperforming TDRs represented approximately 35% of total nonperforming loans and 50% of total TDRs at December 31, 2022. Comparable amounts at December 31, 2021 were 40% and 62%, respectively. The remaining portion of TDRs represents TDRs that have been returned to accrual status after performing under the restructured terms for at least six consecutive months.

See Note 1 Accounting Policies and Note 4 Loans and Related Allowance for Credit Losses for additional information on TDRs.

Loan Modifications

PNC provides relief to our customers experiencing financial hardships through a variety of solutions. Commercial loan and lease modifications are based on each individual borrower's situation and may involve reduction of the interest rate, extension of the loan term and/or forgiveness of principal. Consumer loan modifications are evaluated under our hardship relief programs, including COVID-19 related hardships that extended beyond the initial relief period.

See Troubled Debt Restructurings within this Credit Risk Management section for more information on how certain loans to borrowers experiencing COVID-19 related difficulties were treated prior to the expiration of CARES Act TDR relief.

Allowance for Credit Losses

Our determination of the ACL is based on historical loss and performance experience, current economic conditions, reasonable and supportable forecasts of future conditions and other relevant factors, including current borrower and/or transaction characteristics. We maintain the ACL at an appropriate level for expected losses on our existing investment securities, loans, equipment finance leases, trade receivables and other financial assets and off-balance sheet credit exposures and determine this allowance based on assessments of the remaining estimated contractual term as of the balance sheet date.

Expected losses are estimated primarily using a combination of (i) the expected losses over a reasonable and supportable forecast period, (ii) a period of reversion to long run average expected losses where applicable and (iii) long run average expected losses for the remaining estimated contractual term.

We use forward-looking information in estimating expected credit losses for our reasonable and supportable forecast period. For this purpose, we have established a framework which includes a three-year forecast period and the use of four economic scenarios and associated probability weights, which in combination create a forecast of expected economic outcomes. Forward-looking information, such as forecasted relevant macroeconomic variables, is incorporated into the expected credit loss estimates using quantitative macroeconomic models, as well as through analysis from PNC's economists and management's judgment in qualitatively assessing the ACL.

The reversion period is used to bridge our three-year reasonable and supportable forecast period and the long-run average expected credit losses. We may consider a number of factors in determining the duration of the reversion period, such as contractual maturity of the asset, observed historical patterns and the estimated credit loss rates at the end of the forecast period relative to the beginning of the long run average period. The reversion period is typically 1-3 years, if not immediate.

The long-run average expected credit losses are derived from our available historical credit information. We use long-run average expected loss for the portfolio over the estimated remaining contractual term beyond our reasonable and supportable forecast period and the reversion period.

The following discussion provides additional information related to our reserves under CECL for loans and leases as well as unfunded lending related commitments. See Note 1 Accounting Policies for further discussion on our ACL, including details of our methodologies and discussion of the allowances for investment securities and other financial assets. See also the Critical Accounting Estimates and Judgments section for further discussion of the assumptions used in the determination of the ACL.

Allowance for Loan and Lease Losses

Our pooled expected credit loss methodology is based upon the quantification of PD, LGD, EAD and the remaining estimated contractual term for a loan, loan segment or lease. We also consider the impact of prepayments and amortization on contractual maturity in our expected loss estimates. We use historical data, current borrower characteristics and forecasted economic variables in quantitative methods to estimate these risk parameters by loan, loan segment or lease. PDs represent a quantification of risk that a borrower may not be able to pay their contractual obligation over a defined period of time. LGD describes the estimate of potential loss if a borrower were to default, and EAD (or utilization rates for revolving loans) is the estimated balance outstanding at the time of default. These parameters are calculated for each forecasted scenario and are combined to generate expected loss estimates by scenario in proportion to the scenario weights.

We use a discounted cash flow methodology for our consumer real estate related loan classes and for certain TDR loans. For non-TDR residential real estate loans and lines, we determine effective interest rates considering contractual cash flows adjusted for prepayments and market interest rates. We then determine the net present value of expected cash flows and ALLL by discounting contractual cash flows adjusted for both prepayments and expected credit losses using the effective interest rates.

For loans and leases that do not share similar risk characteristics with a pool of loans, we establish individually assessed reserves using methods prescribed by GAAP. Reserves for individual commercial nonperforming loans and commercial nonperforming TDRs exceeding a defined dollar threshold are based on an analysis of the present value of the loan's expected future cash flows or the fair value of the collateral, if appropriate under our policy for collateral dependent loans. Commercial nonperforming loans that are below the defined threshold and accruing TDRs are collectively reserved for, as we believe these loans continue to share similar risk characteristics. For consumer nonperforming loans classified as collateral dependent, charge-off and ALLL related to recovery of amounts previously charged-off are evaluated through an analysis of the fair value of the collateral less costs to sell.

While our reserve methodologies strive to reflect all relevant credit risk factors, there continues to be uncertainty associated with, but not limited to, potential imprecision in the estimation process due to the inherent time lag of obtaining information and normal variations between expected and actual outcomes. We may hold additional reserves that are designed to provide coverage for losses attributable to such risks. A portion of the allowance is related to qualitative measurement factors. These factors may include, but are not limited to, the following:

- Industry concentrations and conditions,
- Changes in market conditions, including regulatory and legal requirements,
- Changes in the nature and volume of our portfolio,
- Recent credit quality trends,
- Recent loss experience in particular portfolios, including specific and unique events,
- Recent macroeconomic factors that may not be reflected in the forecast information,
- Limitations of available input data, including historical loss information and recent data such as collateral values,
- Model imprecision and limitations,
- Changes in lending policies and procedures, including changes in loss recognition and mitigation policies and procedures, and
- Timing of available information.

Allowance for Unfunded Lending Related Commitments

We maintain the allowance for unfunded lending related commitments on off-balance sheet credit exposures that are not unconditionally cancelable, (*e.g.,* unfunded loan commitments, letters of credit and certain financial guarantees) at a level we believe is appropriate as of the balance sheet date to absorb expected credit losses on these exposures. Other than the estimation of the probability of funding, this reserve is estimated in a manner similar to the methodology used for determining reserves for loans and leases. The allowance for unfunded lending related commitments is recorded as a liability on the Consolidated Balance Sheet. Net adjustments to this reserve are included in the provision for credit losses.

The following table summarizes our ACL related to loans:

Table 25: Allowance for Credit Losses by Loan Class (a)

	December 31, 2022			December 31, 2021		
Dollars in millions	Allowance Amount	Total Loans	% of Total Loans	Allowance Amount	Total Loans	% of Total Loans
Allowance for loans and lease losses						
Commercial						
Commercial and industrial	$ 1,957	$ 182,219	1.07 %	$ 1,879	$ 152,933	1.23 %
Commercial real estate	1,047	36,316	2.88 %	1,216	34,015	3.57 %
Equipment lease financing	110	6,514	1.69 %	90	6,130	1.47 %
Total commercial	3,114	225,049	1.38 %	3,185	193,078	1.65 %
Consumer						
Residential real estate	92	45,889	0.20 %	21	39,712	0.05 %
Home equity	274	25,983	1.05 %	149	24,061	0.62 %
Automobile	226	14,836	1.52 %	372	16,635	2.24 %
Credit card	748	7,069	10.58 %	712	6,626	10.75 %
Education	63	2,173	2.90 %	71	2,533	2.80 %
Other consumer	224	5,026	4.46 %	358	5,727	6.25 %
Total consumer	1,627	100,976	1.61 %	1,683	95,294	1.77 %
Total	$ 4,741	$ 326,025	1.45 %	$ 4,868	$ 288,372	1.69 %
Allowance for unfunded lending related commitments	694			662		
Allowance for credit losses	$ 5,435			$ 5,530		
Allowance for credit losses to total loans			1.67 %			1.92 %
Commercial			1.66 %			1.94 %
Consumer			1.69 %			1.87 %

(a) Excludes allowances for investment securities and other financial assets, which together totaled $176 million and $171 million at December 31, 2022 and 2021, respectively.

The following table summarizes our loan charge-offs and recoveries:

Table 26: Loan Charge-Offs and Recoveries

Year ended December 31 Dollars in millions	Gross Charge-offs	Recoveries	Net Charge-offs / (Recoveries)	% of Average Loans
2022				
Commercial				
Commercial and industrial	$ 257	$ 101	$ 156	0.09 %
Commercial real estate	44	5	39	0.11 %
Equipment lease financing	6	8	(2)	(0.03)%
Total commercial	307	114	193	0.09 %
Consumer				
Residential real estate	11	17	(6)	(0.01)%
Home equity	15	71	(56)	(0.23)%
Automobile	152	124	28	0.18 %
Credit card	256	51	205	3.09 %
Education	16	5	11	0.46 %
Other consumer	228	40	188	3.44 %
Total consumer	678	308	370	0.38 %
Total	$ 985	$ 422	$ 563	0.18 %
2021				
Commercial				
Commercial and industrial	$ 385	$ 88	$ 297	0.21 %
Commercial real estate	36	7	29	0.09 %
Equipment lease financing	13	11	2	0.03 %
Total commercial	434	106	328	0.18 %
Consumer				
Residential real estate	15	28	(13)	(0.04)%
Home equity	20	86	(66)	(0.27)%
Automobile	169	143	26	0.16 %
Credit card	256	46	210	3.39 %
Education	15	8	7	0.25 %
Other consumer	192	27	165	3.05 %
Total consumer	667	338	329	0.38 %
Total	$ 1,101	$ 444	$ 657	0.24 %

Total net charge-offs decreased $94 million, or 14%, in 2022 compared to 2021. The decline was primarily driven by fewer commercial net charge-offs, partially offset by higher consumer net charge-offs primarily due to a decrease in recoveries. Net charge-offs in the comparative period included BBVA-related charge-offs resulting from required purchase accounting treatment.

See Note 1 Accounting Policies and Note 4 Loans and Related Allowance for Credit Losses for additional information.

Liquidity and Capital Management

Liquidity risk has two fundamental components. The first is potential loss assuming we were unable to meet our funding requirements at a reasonable cost. The second is the potential inability to operate our businesses because adequate contingent liquidity is not available. We manage liquidity risk at the consolidated company level (bank, parent company and all subsidiaries combined) to help ensure that we can obtain cost-effective funding to meet current and future obligations under both normal “business as usual” and stressful circumstances, and to help ensure that we maintain an appropriate level of contingent liquidity.

Management monitors liquidity through a series of early warning indicators that may indicate a potential market, or PNC-specific, liquidity stress event. In addition, management performs a set of liquidity stress tests over multiple time horizons with varying levels of severity and maintains a contingency funding plan to address a potential liquidity stress event. In the most severe liquidity stress simulation, we assume that our liquidity position is under pressure, while the market in general is under systemic pressure. The simulation considers, among other things, the impact of restricted access to both secured and unsecured external sources of funding, accelerated runoff of customer deposits, valuation pressure on assets and heavy demand to fund committed obligations. Parent company liquidity guidelines are designed to help ensure that sufficient liquidity is available to meet our parent company obligations over the succeeding 24-month period. Liquidity-related risk limits are established within our Enterprise Liquidity Management Policy and supporting policies. Management committees, including the Asset and Liability Committee, and the Board of Directors and its Risk Committee regularly review compliance with key established limits.

In addition to these liquidity monitoring measures and tools described above, we also monitor our liquidity by reference to the LCR, which is calculated on a daily basis, and the NSFR which are further described in the Supervision and Regulation section in Item 1 Business of this Report.

We provide additional information regarding regulatory liquidity requirements and their potential impact on us in the Supervision and Regulation section of Item 1 Business and Item 1A Risk Factors of this Report.

Sources of Liquidity

Our largest source of liquidity on a consolidated basis is the customer deposit base generated by our banking businesses. These deposits provide relatively stable and low-cost funding. Total deposits decreased to $436.3 billion at December 31, 2022 from $457.3 billion at December 31, 2021 and included a shift from noninterest-bearing to interest-bearing deposits in 2022, reflecting the impact of higher interest rates. See the Funding Sources section of the Consolidated Balance Sheet Review in this Item 7 for additional information related to our deposits. Additionally, certain assets determined by us to be liquid as well as unused borrowing capacity from a number of sources are also available to manage our liquidity position.

At December 31, 2022, our liquid assets consisted of cash and due from banks and short-term investments (federal funds sold, resale agreements, trading securities and interest-earning deposits with banks) totaling $37.8 billion and securities available for sale totaling $44.2 billion. The level of liquid assets fluctuates over time based on many factors, including market conditions, loan and deposit growth and balance sheet management activities. PNC pledges securities as collateral to secure public and trust deposits, repurchase agreements and for other purposes. Pledged securities included $25.3 billion of securities held to maturity and an immaterial amount of available for sale and trading securities.

We also obtain liquidity through various forms of funding, including long-term debt (senior notes, subordinated debt and FHLB borrowings) and short-term borrowings (securities sold under repurchase agreements, commercial paper and other short-term borrowings). See Note 10 Borrowed Funds and the Funding Sources section of the Consolidated Balance Sheet Review in this Item 7 for additional information related to our borrowings.

Total senior and subordinated debt, on a consolidated basis, decreased during 2022 due to the following activity:

Table 27: Senior and Subordinated Debt

In billions	2022
January 1	$ 27.7
Issuances	4.5
Calls and maturities	(7.3)
Other	(1.9)
December 31	$ 23.0

Bank Liquidity

Under PNC Bank's 2014 bank note program, as amended, PNC Bank may from time to time offer up to $40.0 billion aggregate principal amount outstanding at any one time of its unsecured senior and subordinated notes with maturity dates more than nine months (in the case of senior notes) and five years or more (in the case of subordinated notes) from their date of issue. At December 31, 2022, PNC Bank had $8.5 billion of notes outstanding under this program of which $4.7 billion were senior notes and $3.8 billion were subordinated notes.

The following table details PNC Bank note issuances in 2022:

Table 28: PNC Bank Notes Issued

Issuance Date	Amount	Description of Issuance
December 2, 2022	$200 million	$200 million in aggregate principal amount of its senior floating rate notes due December 2, 2024. Interest is payable monthly in arrears at a floating rate per annum of the one-month BSBY, plus 0.700% on the second day of each month from January 2, 2023 to the maturity date of December 2, 2024.

The following table details PNC Bank note redemptions in 2022:

Table 29: PNC Bank Notes Redeemed

Redemption Date	Amount	Description of Redemption
January 18, 2022	$1.25 billion	All outstanding senior bank notes with an original scheduled maturity date of February 17, 2022. The securities had a distribution rate of 2.625%. The redemption price was equal to $1,000 per $1,000 in principal amount, plus any accrued and unpaid distributions to the redemption date of January 18, 2022.
February 24, 2022	$1.0 billion	All outstanding senior floating rate bank notes with an original scheduled maturity date of February 24, 2023. The redemption price was equal to $1,000 per $1,000 in principal amount, plus any accrued and unpaid distributions to the redemption date of February 24, 2022.
February 24, 2022	$500 million	All outstanding senior bank notes with an original scheduled maturity date of February 24, 2023. The securities had a distribution rate of 1.743%. The redemption price was equal to $1,000 per $1,000 in principal amount, plus any accrued and unpaid distributions to the redemption date of February 24, 2022.
May 31, 2022	$750 million	All outstanding senior bank notes with an original scheduled maturity date of June 29, 2022. The securities had a distribution rate of 2.875%. The redemption price was equal to $1,000 per $1,000 in principal amount, plus any accrued and unpaid distributions to the redemption date of May 31, 2022.
June 28, 2022	$750 million	All outstanding senior bank notes with an original scheduled maturity date of July 28, 2022. The securities had a distribution rate of 2.450%. The redemption price was equal to $1,000 per $1,000 in principal amount, plus any accrued and unpaid distributions to the redemption date of June 28, 2022.

PNC Bank maintains additional secured borrowing capacity with the FHLB-Pittsburgh and through the Federal Reserve Bank discount window. The Federal Reserve Bank, however, is not viewed as a primary means of funding our routine business activities, but rather as a potential source of liquidity in a stressed environment or during a market disruption. At December 31, 2022, our unused secured borrowing capacity at the FHLB-Pittsburgh and the Federal Reserve Bank totaled $67.2 billion.

PNC Bank has the ability to offer up to $10.0 billion of its commercial paper to provide additional liquidity. As of December 31, 2022, there were no issuances outstanding under this program.

Additionally, PNC Bank may access funding from the parent company through deposits placed at the bank or through issuing senior unsecured notes.

Parent Company Liquidity

In addition to managing liquidity risk at the bank level, we monitor the parent company's liquidity. The parent company's contractual obligations consist primarily of debt service related to parent company borrowings and funding non-bank affiliates. Additionally, the parent company maintains liquidity to fund discretionary activities such as paying dividends to our shareholders, share repurchases and acquisitions.

As of December 31, 2022, available parent company liquidity totaled $9.6 billion. Parent company liquidity is held in intercompany cash and investments. For investments with longer durations, the related maturities are aligned with scheduled cash needs, such as the maturity of parent company debt obligations.

The principal source of parent company liquidity is the dividends or other capital distributions it receives from PNC Bank, which may be impacted by the following:

- Bank-level capital needs,
- Laws, regulations and the results of supervisory activities,
- Corporate policies,
- Contractual restrictions, and
- Other factors.

There are statutory and regulatory limitations on the ability of a national bank to pay dividends or make other capital distributions or to extend credit to the parent company or its non-bank subsidiaries. The amount available for dividend payments by PNC Bank to the parent company without prior regulatory approval was $3.5 billion at December 31, 2022. See Note 20 Regulatory Matters for further discussion of these limitations.

In addition to dividends from PNC Bank, other sources of parent company liquidity include cash and investments, as well as dividends and loan repayments from other subsidiaries and dividends or distributions from equity investments. We can also generate liquidity for the parent company and PNC's non-bank subsidiaries through the issuance of debt and equity securities, including certain capital instruments, in public or private markets and commercial paper. As authorized by the Board of Directors, the parent company has the ability to offer up to $5.0 billion of commercial paper to provide additional liquidity. As of December 31, 2022, there were no commercial paper issuances outstanding.

The following table details Parent Company note issuances in 2022:

Table 30: Parent Company Notes Issued

Issuance Date	Amount	Description of Issuance
June 6, 2022	$850 million	$850 million of subordinated fixed-to-floating rate notes with a maturity date of June 6, 2033. Interest is payable semi-annually in arrears at a fixed rate of 4.626% per annum, on June 6 and December 6 of each year, beginning on December 6, 2022. Beginning on June 6, 2032, interest is payable quarterly in arrears at a floating rate per annum equal to Compounded SOFR (determined with respect to each quarterly interest period using the SOFR Index as described in the Prospectus Supplement), plus 1.850%, on September 6, 2032, December 6, 2032, March 6, 2033 and at the maturity date.
October 28, 2022	$1.0 billion	$1.0 billion of senior fixed-to-floating rate notes with a maturity date of October 28, 2025. Interest is payable semi-annually in arrears at a fixed rate of 5.671% per annum, on April 28 and October 28 of each year, beginning on April 28, 2023. Beginning on October 28, 2024, interest is payable quarterly in arrears at a floating rate per annum equal to Compounded SOFR (determined with respect to each quarterly interest period using the SOFR Index as described in the Prospectus Supplement), plus 1.09%, on January 28, 2025, April 28, 2025, July 28, 2025 and at the maturity date.
October 28, 2022	$1.5 billion	$1.5 billion of senior fixed-to-floating rate notes with a maturity date of October 28, 2033. Interest is payable semi-annually in arrears at a fixed rate of 6.037% per annum, on April 28 and October 28 of each year, beginning on April 28, 2023. Beginning on October 28, 2032, interest is payable on the 2033 Senior Notes quarterly in arrears at a floating rate per annum equal to Compounded SOFR (determined with respect to each quarterly interest period using the SOFR Index as described in the Prospectus Supplement), plus 2.14%, on January 28, 2033, April 28, 2033, July 28, 2033 and at the maturity date.
December 2, 2022	$1.0 billion	$1.0 billion of senior fixed-to-floating rate notes with a maturity date of December 2, 2028. Interest is payable semi-annually in arrears at a fixed rate of 5.354% per annum, on June 2 and December 2 of each year, beginning on June 2, 2023. Beginning on December 2, 2027, interest is payable quarterly in arrears at a floating rate per annum equal to Compounded SOFR (determined with respect to each quarterly interest period using the SOFR Index as described in the Prospectus Supplement), plus 1.62%, on March 2, 2028, June 2, 2028, September 2, 2028 and at the maturity date.

See Note 25 Subsequent Events for details on the parent company's issuance of $1.25 billion of its 4.758% senior fixed-to-floating rate notes that mature on January 26, 2027 and $1.5 billion of its 5.068% senior fixed-to-floating rate notes that mature on January 24, 2034.

The following table details Parent Company note redemptions in 2022:

Table 31: Parent Company Notes Redeemed

Redemption Date	Amount	Description of Redemption
February 7, 2022	$1.0 billion	$1.0 billion of senior notes with a maturity date of March 8, 2022. The securities had a distribution rate of 3.30%. The redemption price was equal to $1,000 per $1,000 in principal amount, plus any accrued and unpaid distributions to the redemption date of February 7, 2022.

Parent company senior and subordinated debt outstanding totaled $13.1 billion at December 31, 2022 compared with $11.4 billion at December 31, 2021.

Contractual Obligations and Other Commitments

We enter into various contractual arrangements in the normal course of business, certain of which require future payments that could impact our liquidity and capital resources. These obligations include commitments to extend credit, outstanding letters of credit, customer deposits, borrowed funds, operating lease payments and future pension and post-retirement benefits. For further discussion related to these contractual obligations and other commitments, see Note 7 Leases, Note 9 Time Deposits, Note 10 Borrowed Funds, Note 11 Commitments and Note 17 Employee Benefit Plans.

Credit Ratings

PNC's credit ratings affect the cost and availability of short and long-term funding, collateral requirements for certain derivative instruments and the ability to offer certain products.

In general, rating agencies base their ratings on many quantitative and qualitative factors, including capital adequacy, liquidity, asset quality, business mix, level and quality of earnings, and the current legislative and regulatory environment, including implied government support. A decrease, or potential decrease, in credit ratings could impact access to the capital markets and/or increase the cost of debt, and thereby adversely affect liquidity and financial condition.

The following table presents credit ratings for PNC and PNC Bank as of December 31, 2022:

Table 32: Credit Ratings for PNC and PNC Bank

	December 31, 2022		
	Moody's	Standard & Poor's	Fitch
PNC			
Senior debt	A3	A-	A
Subordinated debt	A3	BBB+	A-
Preferred stock	Baa2	BBB-	BBB
PNC Bank			
Senior debt	A2	A	A+
Subordinated debt	A3	A-	A
Long-term deposits	Aa3	A	AA-
Short-term deposits	P-1	A-1	F1+
Short-term notes	P-1	A-1	F1

Capital Management

We manage our funding and capital positions by making adjustments to our balance sheet size and composition, issuing or redeeming debt, issuing equity or other capital instruments, executing treasury stock transactions and capital redemptions or repurchases and managing dividend policies and retaining earnings.

On April 26, 2022, PNC issued 1,000,000 depositary shares each representing 1/100th ownership in a share of 6.000% fixed-rate reset non-cumulative perpetual preferred stock, Series U, with a par value of $1 per share.

On August 19, 2022, PNC issued 1,250,000 depositary shares each representing 1/100th ownership in a share of 6.200% fixed-rate reset non-cumulative perpetual preferred stock, Series V, with a par value of $1 per share.

On November 1, 2022, PNC redeemed all 15,000 shares of its Series P Preferred Stock, as well as all 60 million depositary shares each representing fractional interest in such shares.

In 2022, we returned $6.0 billion of capital to shareholders through dividends on common shares of $2.4 billion and repurchases of 21.2 million common shares for $3.6 billion. Consistent with the SCB framework, which allows for capital return in amounts in excess of the SCB minimum levels, our Board of Directors has authorized a repurchase framework under the repurchase program approved on April 4, 2019 of up to 100 million common shares, of which approximately 49% were still available for repurchase at December 31, 2022. Under this framework, PNC expects quarterly repurchases of up to $500 million with the ability to adjust those levels as conditions warrant. PNC's SCB for the four-quarter period beginning October 1, 2022 is 2.9%.

On January 4, 2023, the PNC Board of Directors declared a quarterly cash dividend on common stock of $1.50 per share. The dividend, with a payment date of February 5, 2023, was paid on the next business day.

See Note 25 Subsequent Events for details on PNC's issuance of $1.5 billion in Series W preferred stock.

See the Supervision and Regulation section of Item 1 Business in this Report for further information concerning the CCAR and DFAST process and the factors the Federal Reserve takes into consideration in its evaluation of capital plans.

Table 33: Basel III Capital

Dollars in millions	December 31, 2022 Basel III (a)	December 31, 2022 (Fully Implemented) (estimated) (b)
Common equity Tier 1 capital		
Common stock plus related surplus, net of treasury stock	$ (3,372)	$ (3,372)
Retained earnings	54,296	53,572
Goodwill, net of associated deferred tax liabilities	(10,758)	(10,758)
Other disallowed intangibles, net of deferred tax liabilities	(380)	(380)
Other adjustments/(deductions)	(101)	(101)
Common equity Tier 1 capital (c)	$ 39,685	$ 38,961
Additional Tier 1 capital		
Preferred stock plus related surplus	5,746	5,746
Tier 1 capital	$ 45,431	$ 44,707
Additional Tier 2 capital		
Qualifying subordinated debt	3,544	3,544
Eligible credit reserves includable in Tier 2 capital	4,465	5,180
Total Basel III capital	$ 53,440	$ 53,431
Risk-weighted assets		
Basel III standardized approach risk-weighted assets (d)	$ 435,537	$ 435,581
Average quarterly adjusted total assets	$ 552,085	$ 551,360
Supplementary leverage exposure (e)	$ 653,776	$ 653,775
Basel III risk-based capital and leverage ratios (f)		
Common equity Tier 1	9.1 %	8.9 %
Tier 1	10.4 %	10.3 %
Total	12.3 %	12.3 %
Leverage (g)	8.2 %	8.1 %
Supplementary leverage ratio (e)	6.9 %	6.8 %

(a) The ratios are calculated to reflect PNC's election to adopt the CECL five-year transition provisions. Effective for the first quarter 2022, PNC is now in the three-year transition period and the full impact of the CECL standard is being phased-in to regulatory capital through December 31, 2024.
(b) The ratios are calculated to reflect the full impact of CECL and excludes the benefits of the optional five-year transition.
(c) As permitted, PNC and PNC Bank have elected to exclude AOCI related to both available for sale securities and pension and other post-retirement plans from CET1 capital.
(d) Basel III standardized approach weighted-assets are based on the Basel III standardized approach rules and include credit and market risk-weighted assets.
(e) The Supplementary leverage ratio is calculated based on Tier 1 capital divided by Supplementary leverage exposure, which takes into account the quarterly average of both on balance sheet assets as well as certain off-balance sheet items, including loan commitments and potential future exposure under derivative contracts.
(f) All ratios are calculated using the regulatory capital methodology applicable to PNC and calculated based on the standardized approach.
(g) Leverage ratio is calculated based on Tier 1 capital divided by Average quarterly adjusted total assets.

PNC's regulatory risk-based capital ratios are calculated using the standardized approach for determining risk-weighted assets. Under the standardized approach for determining credit risk-weighted assets, exposures are generally assigned a pre-defined risk weight. Exposures to high volatility commercial real estate, nonaccruals, TDRs, past due exposures and equity exposures are generally subject to higher risk weights than other types of exposures.

The regulatory agencies have adopted a rule permitting certain banks, including PNC, to delay the estimated impact on regulatory capital stemming from implementing CECL. CECL's estimated impact on CET1 capital, as defined by the rule, is the change in retained earnings at adoption plus or minus 25% of the change in CECL ACL at the balance sheet date, excluding the allowance for PCD loans, compared to CECL ACL at adoption. Effective for the first quarter of 2022, PNC is now in the three-year transition period, and the full impact of the CECL standard is being phased-in to regulatory capital through December 31, 2024. See additional discussion of this rule in the Supervision and Regulation section of Item 1 Business and Item 1A Risk Factors .

At December 31, 2022, PNC and PNC Bank were considered "well capitalized," based on applicable U.S. regulatory capital ratio requirements. To qualify as "well capitalized", PNC must have Basel III capital ratios of at least 6% for Tier 1 risk-based capital and 10% for Total risk-based capital, and PNC Bank must have Basel III capital ratios of at least 6.5% for CET1 risk-based capital, 8% for Tier 1 risk-based capital, 10% for Total risk-based capital and a Leverage ratio of at least 5%.

Federal banking regulators have stated that they expect the largest U.S. BHCs, including PNC, to have a level of regulatory capital well in excess of the regulatory minimum and have required the largest U.S. BHCs, including PNC, to have a capital buffer sufficient to withstand losses and allow them to meet the credit needs of their customers through estimated stress scenarios. We seek to manage our capital consistent with these regulatory principles and believe that our December 31, 2022 capital levels were aligned with them.

We provide additional information regarding regulatory capital requirements and some of their potential impacts on us in the Supervision and Regulation section of Item 1 Business, Item 1A Risk Factors and Note 20 Regulatory Matters.

Market Risk Management

Market risk is the risk of a loss in earnings or economic value due to adverse movements in market factors such as interest rates, credit spreads, foreign exchange rates, commodity prices and equity prices. We are exposed to market risk primarily by our involvement in the following activities, among others:

- Traditional banking activities of gathering deposits and extending loans,
- Fixed income securities, derivatives and foreign exchange activities, as a result of customer activities, securities underwriting and our investment portfolio, and
- Other investments, including equity and activities whose economic values are directly impacted by market factors.

We have established enterprise-wide policies and methodologies to identify, measure, monitor and report market risk. Market Risk Management provides independent oversight by monitoring compliance with established guidelines and reporting significant risks in the business to management committees and, where appropriate, the Risk Committee of the Board of Directors.

Market Risk Management – Interest Rate Risk

Interest rate risk results primarily from our traditional banking activities of gathering deposits and extending loans. Many factors, including economic and financial conditions, movements in interest rates and consumer preferences, affect the difference between the interest that we earn on assets and the interest that we pay on liabilities and the level of our noninterest-bearing funding sources. Due to the repricing term mismatches and embedded options inherent in certain of these products, changes in market interest rates not only affect expected near-term earnings, but also the economic values of these assets and liabilities.

Our Asset and Liability Management group centrally manages interest rate risk as prescribed in our risk management policies, which are approved by management's Asset and Liability Committee and the Risk Committee of the Board of Directors.

Sensitivity results and market interest rate benchmarks for the fourth quarters of 2022 and 2021 follow:

Table 34: Interest Sensitivity Analysis

	Fourth Quarter 2022	Fourth Quarter 2021
Net Interest Income Sensitivity Simulation (a)		
Effect on net interest income in first year from gradual interest rate change over the following 12 months of:		
100 basis point increase	1.2 %	3.7 %
100 basis point decrease (a)	(1.4)%	N/A
Effect on net interest income in second year from gradual interest rate change over the preceding 12 months of:		
100 basis point increase	3.1 %	9.9 %
100 basis point decrease (a)	(4)%	N/A

(a) Due to the prevailing low interest rate environment during the COVID-19 pandemic, the reporting of Net interest income sensitivities for the 100 basis point decrease scenario was suspended from the first quarter of 2020 to the first quarter of 2022.

In addition to measuring the effect on net interest income assuming parallel changes in current interest rates, we routinely simulate the effects of a number of nonparallel interest rate environments. Table 35 reflects the estimated percentage change in net interest income over the next two 12-month periods assuming (i) PNC's most likely rate forecast, (ii) implied market forward rates and (iii) a yield curve slope flattening (a 100 basis point yield curve slope flattening between one-month and ten-year rates superimposed on current base rates) scenario.

All changes in forecasted net interest income are relative to results in a base rate scenario where current market rates are assumed to remain unchanged over the forecast horizon.

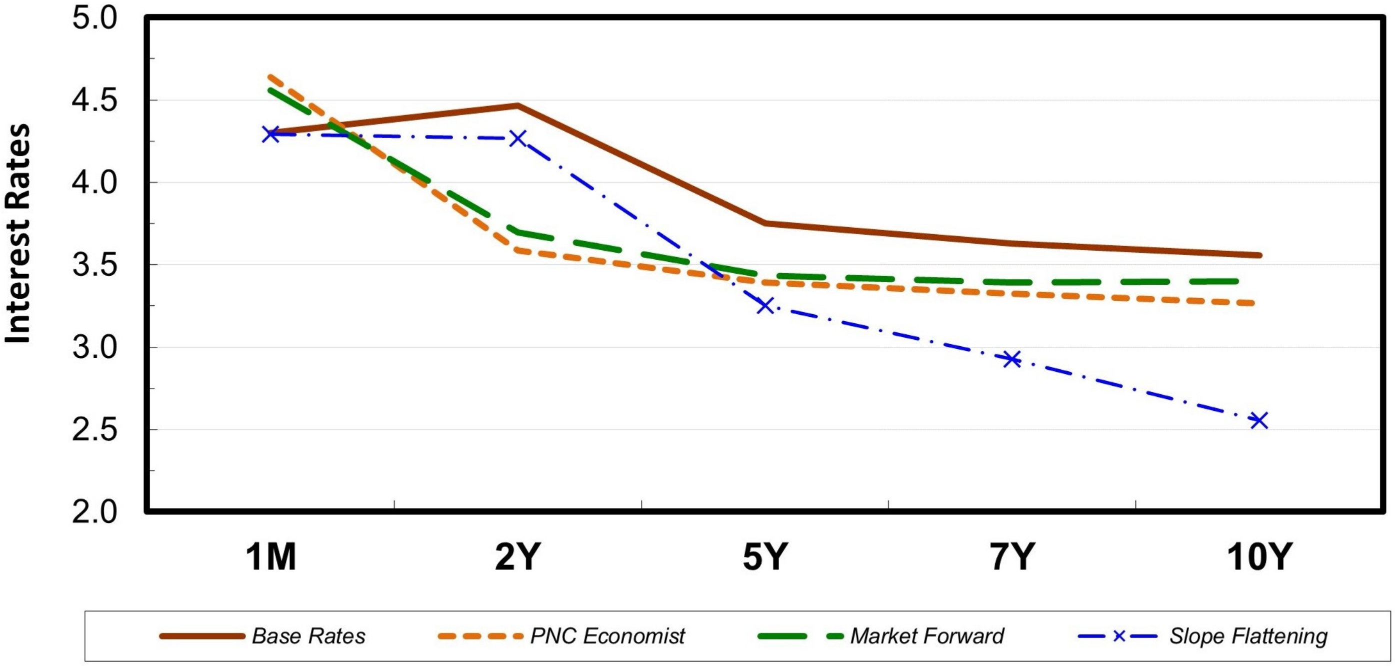
Table 35: Net Interest Income Sensitivity to Alternative Rate Scenarios

	December 31, 2022		
	PNC Economist	Market Forward	Slope Flattening
First year sensitivity	0.1 %	2.0 %	(0.6)%
Second year sensitivity	(2.5)%	(1.6)%	(2.6)%

When forecasting net interest income, we make assumptions about interest rates and the shape of the yield curve, the volume and characteristics of new business and the behavior of existing on- and off-balance sheet positions. These assumptions determine the future level of simulated net interest income in the base interest rate scenario and the other interest rate scenarios presented in Tables 34 and 35. These simulations assume that as assets and liabilities mature, they are replaced or repriced at then-current market rates.

The following graph presents the SOFR curves for the base rate scenario and each of the alternate scenarios one year forward:

Table 36: Alternate Interest Rate Scenarios: One Year Forward



The fourth quarter 2022 interest sensitivity analyses indicate that our Consolidated Balance Sheet is positioned to benefit from an increase in interest rates and an upward sloping interest rate yield curve. We believe that we have the deposit funding base and balance sheet flexibility to adjust, where appropriate and permissible, to changing interest rates and market conditions.

LIBOR Transition

As discussed in Item 1A Risk Factors, the scheduled cessation of the requirement that banks submit rates for the calculation of LIBOR after June 30, 2023, presents risks to the financial instruments originated, held, or serviced by PNC that use LIBOR as a reference rate. PNC holds instruments and services its instruments and instruments owned by others that may be impacted by the likely cessation of LIBOR, including loans, investments, hedging products, floating-rate obligations and other financial instruments that use LIBOR as a reference rate. The transition from LIBOR as an interest rate benchmark will subject PNC, like other financial participants, to financial, legal, operational and reputational risks.

In order to address LIBOR cessation and the associated risks, PNC has established a cross-functional governance structure to oversee the overall strategy for the transition from LIBOR and mitigate risks associated with the transition.

Key efforts to date have included:

- Completion of LIBOR impact and risk assessments,
- Enhancing fallback language in new contracts and reviewing existing legal contracts/agreements to assess fallback language impacts,
- Preparing for internal operational readiness,
- Making necessary enhancements to PNC's infrastructure, including systems, models, valuation tools and processes,
- Developing and delivering on internal and external LIBOR cessation communication plans,
- Engaging with PNC clients, industry working groups, and regulators,
- Monitoring developments associated with LIBOR alternatives and industry practices related to LIBOR-indexed instruments, and
- Providing periodic regulator updates to the Federal Reserve, OCC and FDIC examination staff regarding PNC's LIBOR cessation and transition plans.

As of December 31, 2021, PNC Bank ceased entering into new contracts with a LIBOR reference rate, except on a limited basis, as permissible. PNC is offering conforming adjustable-rate mortgages using SOFR instead of USD LIBOR, in line with Fannie Mae and Freddie Mac requirements, nonconforming adjustable-rate residential mortgages using SOFR and private education loans using Prime.

Alternative rates, primarily SOFR and BSBY, are currently offered to our corporate and commercial customers. The focus for 2022 was planning for the cessation event in 2023 for all lines of business. Corporate & Institutional Banking continues its efforts of amending contracts with inadequate fallback language, working on systems enhancements, and continuing with client outreach and education.

The Federal Reserve adopted a final rule effective February 27, 2023 that implements the Adjustable Interest Rate LIBOR Act (the “Act”) by identifying benchmark rates based on SOFR that will replace LIBOR in certain financial contracts after June 30, 2023. The final rule helps ensure that LIBOR contracts adopting a benchmark rate selected by the Federal Reserve will not be interrupted or terminated following LIBOR’s replacement. The final rule identifies replacement benchmark rates based on SOFR to replace overnight, one-month, three-month, six-month, and 12-month LIBOR contracts subject to the Act. These contracts include U.S. contracts that do not mature before publication of LIBOR ends June 30, 2023, and that lack adequate fallback provisions that would replace LIBOR with a practicable replacement benchmark rate.

As of December 31, 2022, PNC had approximately $60.6 billion in loans and securities and $332.9 billion notional value in derivatives tied to LIBOR that mature after June 30, 2023. PNC is actively working to address contracts without an alternative rate or sufficient fallbacks in advance of cessation; however, PNC does expect to leverage the LIBOR Act for its intended purpose, to address difficult exposures when necessary. We anticipate these exposures to be a small subset of our overall portfolio.

Market Risk Management – Customer-Related Trading Risk

We engage in fixed income securities, derivatives and foreign exchange transactions to support our customers’ investing and hedging activities. These transactions, related hedges and the credit valuation adjustment related to our customer derivatives portfolio are marked-to-market daily and reported as customer-related trading activities. We do not engage in proprietary trading of these products.

We use VaR as the primary means to measure and monitor market risk in customer-related trading activities. VaR is used to estimate the probability of portfolio losses based on the statistical analysis of historical market risk factors. A diversified VaR reflects empirical correlations across different asset classes. We calculate a diversified VaR at a 95% confidence interval and the results for 2022 and 2021 were within our acceptable limits.

To help ensure the integrity of the models used to calculate VaR for each portfolio and enterprise-wide, we use a process known as backtesting. The backtesting process consists of comparing actual observations of gains or losses against the VaR levels that were calculated at the close of the prior day. Our VaR measure assumes that exposures remain constant and that recent market variability is a good predictor of future variability. Actual observations include customer-related revenue and intraday hedging, which helps to reduce losses and can reduce the number of instances actual losses exceed the prior day VaR measure. There were no instances during 2022 and 2021 under our diversified VaR measure where actual losses exceeded the prior-day VaR measure. Our portfolio and enterprise-wide VaR models utilize a historical approach with a 500-day look-back period.

Customer-related trading revenue was $382 million in 2022 compared with $372 million in 2021 and is recorded in Other noninterest income and Other interest income on our Consolidated Income Statement. The increase was primarily due to higher foreign exchange and derivative client sales revenues, partially offset by the impact of the changes in credit valuations for customer-related derivative activities.

Market Risk Management – Equity And Other Investment Risk

Equity investment risk is the risk of potential losses associated with investing in both private and public equity markets. In addition to extending credit, taking deposits, underwriting securities and trading financial instruments, we make and manage direct investments in a variety of transactions, including management buyouts, recapitalizations and growth financings in a variety of industries. We also have investments in affiliated and non-affiliated funds that make similar investments in private equity, consistent with regulatory limitations. The economic and/or book value of these investments and other assets are directly affected by changes in market factors.

Various PNC business units manage our equity and other investment activities. Our businesses are responsible for making investment decisions within the approved policy limits and associated guidelines.

A summary of our equity investments follows:

Table 37: Equity Investments Summary

Dollars in millions	December 31 2022	December 31 2021	Change $	Change %
Tax credit investments	$ 4,308	$ 3,954	$ 354	9 %
Private equity and other	4,129	4,226	(97)	(2)%
Total	$ 8,437	$ 8,180	$ 257	3 %

Tax Credit Investments
Included in our equity investments are direct tax credit investments and tax credit equity investments held by consolidated entities. These tax credit investment balances included unfunded commitments totaling $2.5 billion and $2.2 billion at December 31, 2022 and 2021, respectively. These unfunded commitments are included in Other liabilities on our Consolidated Balance Sheet.

Note 5 Loan Sale and Servicing Activities and Variable Interest Entities has further information on tax credit investments.

Private Equity and Other
The largest component of our other equity investments is our private equity portfolio. The private equity portfolio is an illiquid portfolio consisting of mezzanine and equity investments that vary by industry, stage and type of investment. Private equity investments carried at estimated fair value totaled $1.8 billion at both December 31, 2022 and 2021, respectively. As of December 31, 2022, $1.6 billion was invested directly in a variety of companies, and $0.2 billion was invested indirectly through various private equity funds. See the Supervision and Regulation section in Item 1 of this Report for discussion of the Volcker Rule limitations on our interests in and relationships with private funds.

Included in our other equity investments are Visa Class B common shares, which are recorded at cost. Visa Class B common shares that we own are transferable only under limited circumstances until they can be converted into shares of the publicly-traded Class A common shares, which cannot happen until the resolution of the pending interchange litigation. Based upon the December 31, 2022 per share closing price of $207.76 for a Visa Class A common share, the estimated value of our total investment in the Class B common shares was approximately $1.2 billion at the current conversion rate of Visa B shares to Visa A shares, while our cost basis was insignificant. See Note 15 Fair Value and Note 21 Legal Proceedings for additional information regarding our Visa agreements. The estimated value does not represent fair value of the Visa B common shares given the shares' limited transferability and the lack of observable transactions in the marketplace.

We also have certain other equity investments, the majority of which represent investments in affiliated and non-affiliated funds with both traditional and alternative investment strategies. Net gains related to these investments were $45 million in 2022 and $50 million in 2021.

Impact of Inflation
Our assets and liabilities are primarily financial in nature and typically have varying maturity dates. Accordingly, future changes in prices do not affect the obligations to pay or receive fixed and determinable amounts of money. However, during periods of inflation, there may be a subsequent impact affecting certain fixed costs or expenses, an erosion of consumer and customer purchasing power, and fluctuations in the need or demand for our products and services. When significant levels of inflation occur, our business could potentially be impacted by, among other things, reducing our tolerance for extending credit or causing us to incur additional credit losses resulting from possible increased default rates. Throughout most of 2022, inflation continued to rise but started to slow toward the end of the year. The Federal Reserve monetary policy has tightened with the intent to slow inflation, which has led to larger increases in interest rates. See Risk Factors in Item 1A, our Executive Summary and Cautionary Statement Regarding Forward-Looking statements in this Item 7 for further discussion of inflation and its overall impact to the economy, our borrowers' ability to repay their obligations and certain costs and expenses to PNC.

Financial Derivatives
We use a variety of financial derivatives as part of the overall asset and liability risk management process to help manage exposure to market (primarily interest rate) and credit risk inherent in our business activities. We also enter into derivatives with customers to facilitate their risk management activities.

Financial derivatives involve, to varying degrees, market and credit risk. 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. Therefore, cash requirements and exposure to credit risk are significantly less than the notional amount on these instruments.

Further information on our financial derivatives is presented in Note 1 Accounting Policies, Note 15 Fair Value and Note 16 Financial Derivatives.

Not all elements of market and credit risk are addressed through the use of financial derivatives, and such instruments may be ineffective for their intended purposes due to unanticipated market changes, among other reasons.

Operational Risk Management

Operational risk is the risk to the current or projected financial condition and resilience arising from inadequate or failed internal processes or systems, human errors or misconduct or adverse external events. Operational risk is inherent to the entire organization.

Operational risk management is embedded in our culture and decision-making processes through a systematic approach whereby operational risks and exposures are: (i) identified and assessed; (ii) managed through the design and implementation of controls; (iii) measured and evaluated against our risk tolerance limits; and (iv) appropriately reported to management and the Risk Committee of the Board of Directors. Strong operational risk management and well-informed risk-based decisions benefit us by improving the customer experience, enhancing compliance, reducing reputational risk, minimizing losses and establishing an appropriate amount of required operational risk capital held by us.

The Operational Risk Management Framework is designed to provide effective and consistent management of operational risk. The primary purpose of the framework is to enable us to understand our operational risks and manage them to the desired risk profile, in line with our Risk Appetite. Additionally, the guidance established within the framework assists management in making well-informed risk-based business decisions.

The framework provides a disciplined and structured process for us to manage operational risk across eight operational risk domains. These domains provide a comprehensive view of operational risk and allow us to discuss operational risk in a standard way, facilitating reporting and ongoing risk mitigation.

The operational risk domains are:

- Operations: Risk resulting from inadequate or failed internal processes, misconduct or errors of people or fraud.
- Compliance: Risk of legal or regulatory sanctions, financial loss, or damage to reputation resulting from failure to comply with laws, regulations, rules, self-regulatory standards or other regulatory requirements.
- Data Management: Risk associated with incomplete or inaccurate data.
- Model: Risk associated with the design, implementation and ongoing use and management of models.
- Technology and Systems: Risk associated with the use, operation and adoption of technology.
- Information Security: Risk resulting from the failure to protect information and ensure appropriate access to, and use and handling of, information assets.
- Business Continuity: Risk of potential disruptive events to business activities.
- Third Party: Risk arising from failure of third-party providers to conduct activity in a safe and sound manner and in compliance with contract provisions and applicable laws and regulations.

We utilize operational risk management programs within the framework, including Risk and Control Self-Assessments, scenario analysis, and internal and external loss event reviews and analysis, to assess existing risks, determine potential/emerging risks and evaluate the effectiveness of internal controls. Program tools and methodology assist our business managers in identifying potential risks and control gaps.

Lines of business are responsible for identifying, owning, managing and monitoring the operational risks and controls associated with their business activities and product or service offerings to within acceptable levels. Centralized functions, such as Business Continuity, Enterprise Third Party Management and Information Security, are responsible for the development, implementation and management of their individual programs and for the development and maintenance of the policies, procedures, methodologies, tools and technology utilized across the enterprise to identify, assess, monitor and report program risks. Additionally, independent risk management reviews and challenges line of business adherence to the framework to help ensure proper controls are in place and appropriate risk mitigation plans are established as necessary.

Conduct, Reputational and Strategic Risk

PNC's risk culture seeks to reinforce the appropriate protocols for responsible and ethical behavior through sound processes and controls. In order to promote a robust risk culture, the Board and executive management establish code of conduct and professional standards to which all employees must adhere. A strong risk culture discourages misconduct and supports conduct risk management at PNC. Conduct risk is defined as the risk that employees fail to comply with the ethical standards expected of them. Strong conduct risk management is important in supporting PNC's reputation, and PNC maintains a corporate culture that emphasizes complying with laws, regulations, and managing reputational risks. Reputational risk is the risk to the franchise and/or shareholder value based on a negative perception of PNC by its stakeholders and/or the changing expectations of its stakeholders. Strategic risk is another component of the ERM Framework that is also critical to optimizing shareholder returns. Strategic risk is the risk to earnings that may arise from adverse business decisions, improper implementation of business decisions and/or inadequate response to changes in the business environment. Strategic risk is considered and assessed by our businesses in the annual strategic planning processes and monitored on an on-going basis as those plans are carried out.

Compliance Risk

Enterprise Compliance is responsible for oversight of compliance risk for the organization. Compliance issues are identified and tracked through enterprise-wide monitoring and testing activities. Compliance risk issues are escalated through a comprehensive risk reporting process at both a business and enterprise level and incorporated, as appropriate, into the development and assessment of our operational risk profile. A management committee, chaired by the Chief Compliance Officer, is responsible for oversight of compliance and fiduciary risk management programs across PNC. Enterprise Compliance, through the Regulatory Change Program, helps PNC understand and proactively address emerging regulatory topics and risks as well as respond to changes in applicable laws and regulations. To understand emerging issues impacting the industry, Enterprise Compliance communicates regularly with various regulators having supervisory or regulatory responsibilities with respect to us, our subsidiaries, or businesses and participates in forums focused on regulatory and compliance matters in the financial services industry.

Information Security Risk

The Information Security component of our Operational Risk Management Framework is responsible for protecting information assets to achieve business objectives, which includes cybersecurity. PNC's cybersecurity program is designed to identify risks to sensitive information, protect that information, detect threats and events and maintain an appropriate response and recovery capability to help ensure resilience against information security incidents. The program includes, among other things, annual security and privacy training for all PNC employees and quarterly phishing exercises to raise employee awareness. Our security program is also regularly examined by federal regulators for compliance with financial regulations and standards. The program also establishes expectations for information asset management, system development security, identity and access management, incident management, threat and vulnerability management, security operations management and third- and fourth-party security.

CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Our consolidated financial statements are prepared by applying certain accounting policies. Note 1 Accounting Policies describes the most significant accounting policies that we use. Certain of these policies require us to make estimates or economic assumptions that may vary under different assumptions or conditions, and such variations may significantly affect our reported results and financial position for the period or in future periods.

Allowance for Credit Losses

We maintain the ACL at levels that we believe to be appropriate as of the balance sheet date to absorb expected credit losses on our existing investment securities, loans, equipment finance leases, other financial assets and unfunded lending related commitments, for the remaining contractual term of the assets or exposures, taking into consideration expected prepayments and estimated recoveries. Our determination of the ACL is based on historical loss and performance experience, as well as current borrower and transaction characteristics including collateral type and quality, current economic conditions, reasonable and supportable forecasts of future conditions and other relevant factors. We use methods sensitive to changes in economic conditions to interpret these factors and to estimate expected credit losses. We evaluate and, when appropriate, enhance the quality of our data and models and other methods used to estimate ACL on an ongoing basis. We incorporate qualitative factors in the ACL that reflect our best estimate of expected losses that may not be adequately represented in our quantitative methods or economic assumptions. The major drivers of ACL estimates include, but are not limited to:

- Current economic conditions: Our forecast of expected losses depends on economic conditions as of the estimation date. As current economic conditions evolve, forecasted losses could be materially affected.
- Scenario weights and design: Our loss estimates are sensitive to the shape, direction and rate of change of macroeconomic forecasts and thus vary significantly between upside and downside scenarios. Change to probability weights assigned to these scenarios and timing of peak business cycles reflected by the scenarios could materially affect our loss estimates.
- Current borrower quality: Our forecast of expected losses depends on current borrower and transaction characteristics, including credit metrics and collateral type/quality. As borrower quality evolves, forecasted losses could be materially affected.
- Portfolio volume and mix: Changes to portfolio volume and mix could materially affect our estimates, as CECL reserves would be recognized upon origination or acquisition and derecognized upon paydown, maturity or sale.

For all assets and unfunded lending related commitments within the scope of the CECL standard, the applicable ACL is composed of one or a combination of the following components: (i) collectively assessed or pooled reserves, (ii) individually assessed reserves, and (iii) qualitative (judgmental) reserves. Our methodologies and key assumptions for each of these components are discussed in Note 1 Accounting Policies.

Reasonable and Supportable Economic Forecast

Under the CECL standard, we are required to consider reasonable and supportable forecasts in estimating expected credit losses. For this purpose, we have established a framework that includes a three-year forecast period and the use of four economic scenarios with associated probability weights, which in combination create a forecast of expected economic outcomes. Credit losses estimated in our reasonable and supportable forecast period are sensitive to the shape and severity of the scenarios used and weights assigned to them.

To generate the four economic forecast scenarios we use a combination of quantitative macroeconomic models, other measures of economic activity and forward-looking expert judgment to forecast the distribution of economic outcomes over the reasonable and supportable forecast period. Each scenario is then given an associated probability (weight) in order to represent our current expectation within that distribution over the forecast period. This process is informed by current economic conditions, expected business cycle evolution and the expert judgment of PNC's RAC. This approach seeks to provide a reasonable representation of the forecast of expected economic outcomes and is used to estimate expected credit losses across a variety of loans and securities. Each quarter the scenarios are presented to RAC for approval, and the committee determines and approves CECL scenarios' weights for use for the current reporting period.

The scenarios used for the period ended December 31, 2022 reflect an increase in downside risk compared to December 31, 2021. The current outlook considers the inflationary pressures that have broadened and intensified since the start of 2022, along with the fact that the FOMC raised interest rates more aggressively than what was expected at December 31, 2021, increasing the risk of a broader-ranged economic slowdown. Our most-likely expectation at December 31, 2022 is that the U.S. economy enters a mild recession in 2023.

We used a number of economic variables in our scenarios, with two of the most significant drivers being Real GDP and the U.S. unemployment rate. The following table presents a comparison of these two economic variables based on the weighted-average scenario forecasts used in determining our ACL at December 31, 2022 and 2021.

Table 38: Key Macroeconomic Variables in CECL Weighted-Average Scenarios

	Assumptions as of December 31, 2022		
	2023	2024	2025
U.S. Real GDP (a)	(0.4)%	1.4%	1.9%
U.S. Unemployment Rate (b)	4.9%	4.9%	4.4%
	Assumptions as of December 31, 2021		
	2022	2023	2024
U.S. Real GDP (a)	2.8%	1.4%	1.3%
U.S. Unemployment Rate (c)	4.4%	4.1%	3.9%

(a) Represents year-over-year growth (loss) rates.
(b) Represents the average forecasted unemployment rate for the fourth quarters of 2023, 2024 and 2025 as of December 31, 2022.
(c) Represents the average forecasted unemployment rate for the fourth quarters of 2022, 2023 and 2024 as of December 31, 2021.

Real GDP growth is expected to decline 0.4% in 2023 on a weighted average basis, driven primarily by our most likely scenario that the U.S. economy enters a mild recession during the year. Growth rises to 1.4% in 2024, before growing to 1.9% in 2025. In line with the slowing in overall economic activity, the weighted average unemployment rate is expected to increase throughout 2023, peaking at 5.1% during the first half of 2024 and gradually improving to 4.4% by the fourth quarter of 2025.

The current state of the economy reflects an environment with receding COVID-19 related risks, but heightened uncertainty remains due to structural and secular changes fostered by the pandemic for certain sectors of the economy combined with inflation, rising interest rates and ongoing supply chain pressures. As such, for both our commercial and consumer loan portfolios, PNC identified and performed significant analysis around segments impacted by such uncertainties to ensure our reserves are adequate, given our current macroeconomic expectations.

We believe the economic scenarios effectively reflect the distribution of potential economic outcomes. Additionally, through in-depth and granular analysis we have addressed reserve requirements for the specific populations most affected in the current environment. Through this approach, we believe the reserve levels appropriately reflect the expected credit losses in the portfolio as of the balance sheet date.

To provide additional context regarding the sensitivity of the ACL to a more pessimistic forecast of expected economic outcomes, we considered what our ACL would be when applying a 100% probability weighting to the most severe downside CECL scenario. This severe downside scenario estimated that Real GDP contracted in 2023 ending the year down 2.5% compared to 2022 levels, with growth picking up again by the end of 2024. The unemployment rate in this scenario increased to end 2023 at 6.3%, then sees a peak rate of 7.3% in the second half of 2024, before gradually improving to 6.4% by the end of 2025. Excluding consideration of qualitative adjustments, this sensitivity analysis would result in a hypothetical increase in our ACL of $1.6 billion at December 31, 2022. This scenario does not reflect our current expectation at December 31, 2022, nor does it capture all the potential unknown variables that could arise in the forecast period, but it provides an approximation of a possible outcome under hypothetical severe conditions. The CECL methodology inherently requires a high degree of judgment, and as a result, it is possible that we may, at another point in time, reach different conclusions regarding our credit loss estimates.

Residential and Commercial Mortgage Servicing Rights

We elect to measure our MSRs at fair value. This election was made to be consistent with our risk management strategy to hedge changes in the fair value of these assets. The fair value of our MSRs is estimated by using a discounted cash flow valuation model that calculates the present value of estimated future net servicing cash flows, taking into consideration actual and expected mortgage loan prepayment rates, discount rates, servicing costs, and other factors which are determined based on current market conditions.

We employ risk management strategies designed to protect the value of MSRs from changes in interest rates and related market factors. The values of the MSRs are economically hedged with securities and derivatives, including interest-rate swaps, options, and forward mortgage-backed and futures contracts. As interest rates change, these financial instruments are expected to have changes in fair value negatively correlated to the change in fair value of the hedged MSR portfolios. The hedge relationships are actively managed in response to changing market conditions over the life of the MSRs. Selecting appropriate financial instruments to economically hedge residential or commercial MSRs requires significant management judgment to assess how mortgage rates and prepayment speeds could affect the future values of MSRs. Hedging results can frequently be less predictable in the short term, but over longer periods of time, they are expected to protect the economic value of the MSRs.

For information on how each estimate has changed and a sensitivity analysis of the hypothetical effect of the fair value of MSRs to immediate adverse changes in key assumptions, see Note 6 Goodwill and Mortgage Servicing Rights. For additional information on our residential and commercial MSRs, see Note 1 Accounting Policies, Note 6 Goodwill and Mortgage Servicing Rights and Note 15 Fair Value.

Fair Value Measurements - Level 3

We must use estimates, assumptions and judgments when assets and liabilities are required to be recorded at, or adjusted to reflect, fair value. Assets and liabilities carried at fair value inherently result in a higher degree of financial statement volatility. When observable price and third-party information is not available, we estimate fair value primarily by using cash flow and other financial modeling techniques. Changes in underlying factors, assumptions, or estimates in any of these valuation techniques could materially impact our future financial condition and results of operations.

We apply ASC 820 – *Fair Value Measurements*. This guidance defines fair value as the price that would be received to sell a financial asset or paid to transfer a financial liability in an orderly transaction between market participants at the measurement date. This guidance requires 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 in the measurement are observable or unobservable. Level 3 assets and liabilities are those where the fair value is estimated using significant unobservable inputs. While estimating potential sensitivities around fair value measurements is inherently challenging, we provide a summary of the key unobservable inputs in Note 15 Fair Value.

For additional information on Level 3 fair value measurements, see Note 15 Fair Value.

Recently Adopted Accounting Pronouncements

See Note 1 Accounting Policies regarding the impact of new accounting pronouncements that we have adopted.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

We make statements in this Report, and we may from time to time make other statements, regarding our outlook for financial performance, such as earnings, revenues, expenses, tax rates, capital and liquidity levels and ratios, asset levels, asset quality, financial position, and other matters regarding or affecting us and our future business and operations, including our sustainability strategy, that are forward-looking statements within the meaning of the Private Securities Litigation Reform Act. Forward-looking statements are typically identified by words such as “believe,” “plan,” “expect,” “anticipate,” “see,” “look,” “intend,” “outlook,” “project,” “forecast,” “estimate,” “goal,” “will,” “should” and other similar words and expressions.

Forward-looking statements are necessarily subject to numerous assumptions, risks and uncertainties, which change over time. Future events or circumstances may change our outlook and may also affect the nature of the assumptions, risks and uncertainties to which our forward-looking statements are subject. Forward-looking statements speak only as of the date made. We do not assume any duty and do not undertake any obligation to update forward-looking statements. Actual results or future events could differ, possibly materially, from those anticipated in forward-looking statements, as well as from historical performance. As a result, we caution against placing undue reliance on any forward-looking statements.

Our forward-looking statements are subject to the following principal risks and uncertainties.

- Our businesses, financial results and balance sheet values are affected by business and economic conditions, including:
  - Changes in interest rates and valuations in debt, equity and other financial markets,
  - Disruptions in the U.S. and global financial markets,
  - Actions by the Federal Reserve Board, U.S. Treasury and other government agencies, including those that impact money supply, market interest rates and inflation,
  - Changes in customer behavior due to changing business and economic conditions or legislative or regulatory initiatives,
  - Changes in customers’, suppliers’ and other counterparties’ performance and creditworthiness,
  - Impacts of tariffs and other trade policies of the U.S. and its global trading partners,
  - The impact of the Russia-Ukraine conflict, and associated sanctions or other actions in response, on the global and U.S. economy,
  - The length and extent of the economic impacts of the COVID-19 pandemic, including those arising from actions taken to mitigate and manage it,
  - Impacts of changes in federal, state and local governmental policy, including on the regulatory landscape, capital markets, taxes, infrastructure spending and social programs,
  - PNC’s ability to attract, recruit and retain skilled employees, and
  - Commodity price volatility.
- Our forward-looking financial statements are subject to the risk that economic and financial market conditions will be substantially different than those we are currently expecting and do not take into account potential legal and regulatory contingencies. These statements are based on our views that:
  - The economy continues to expand in early 2023, but economic growth is slowing in response to the ongoing Federal Reserve monetary policy tightening to slow inflation. This has led to large increases in both short-and long-term interest rates. With much higher mortgage rates the housing market is already in contraction, with steep drops in existing home sales and single-family housing starts, and a modest decline in house prices. Other sectors where interest rates play an outsized role, such as business investment and consumer spending on durable goods, will contract in 2023.
  - PNC’s baseline outlook is for a recession starting in the second half of 2023, with real GDP contracting a modest 1% before recovery starts in early 2024 as the Federal Reserve lowers interest rates in response to a deteriorating labor market and slower inflation. The unemployment rate will increase throughout 2023, peaking at above 5% in the first half of 2024. Inflation will slow with the recession and be back to the Federal Reserve’s 2% long-term objective by early 2024.
  - PNC expects the FOMC to increase the federal funds rate by an additional 25 basis points in March. This would bring the federal funds rate to a range of 4.75% to 5.00% by mid-March. PNC expects a federal funds rate cut of 25 basis points in early 2024 as inflation moves toward the FOMC’s 2% long-term objective.
- PNC’s ability to take certain capital actions, including returning capital to shareholders, is subject to PNC meeting or exceeding an SCB established by the Federal Reserve Board in connection with the Federal Reserve Board’s CCAR process.
- PNC’s regulatory capital ratios in the future will depend on, among other things, the company’s financial performance, the scope and terms of final capital regulations then in effect and management actions affecting the composition of PNC’s balance sheet. In addition, PNC’s ability to determine, evaluate and forecast regulatory capital ratios, and to take actions (such as capital distributions) based on actual or forecasted capital ratios, will be dependent at least in part on the development, validation and regulatory review of related models and the reliability of and risks resulting from extensive use of such models.
- Legal and regulatory developments could have an impact on our ability to operate our businesses, financial condition, results of operations, competitive position, reputation or pursuit of attractive acquisition opportunities. Reputational impacts could

affect matters such as business generation and retention, liquidity, funding, and ability to attract and retain management. These developments could include:
  - Changes to laws and regulations, including changes affecting oversight of the financial services industry, consumer protection, bank capital and liquidity standards, pension, bankruptcy and other industry aspects, and changes in accounting and reporting standards.
  - Unfavorable resolution of legal proceedings or other claims and regulatory and other governmental investigations or other inquiries resulting in monetary losses, costs, or alterations in our business practices, and potentially causing reputational harm to PNC.
  - Results of the regulatory examination and supervision process, including our failure to satisfy requirements of agreements with governmental agencies.
  - Costs associated with obtaining rights in intellectual property claimed by others and of adequacy of our intellectual property protection in general.
- Business and operating results are affected by our ability to identify and effectively manage risks inherent in our businesses, including, where appropriate, through effective use of systems and controls, third-party insurance, derivatives and capital management techniques, and to meet evolving regulatory capital and liquidity standards.
- Our reputation and business and operating results may be affected by our ability to appropriately meet or address environmental, social or governance targets, goals, commitments or concerns that may arise.
- We grow our business in part through acquisitions and new strategic initiatives. Risks and uncertainties include those presented by the nature of the business acquired and strategic initiative, including in some cases those associated with our entry into new businesses or new geographic or other markets and risks resulting from our inexperience in those new areas, as well as risks and uncertainties related to the acquisition transactions themselves, regulatory issues, and the integration of the acquired businesses into PNC after closing or any failure to execute strategic or operational plans.
- Competition can have an impact on customer acquisition, growth and retention and on credit spreads and product pricing, which can affect market share, deposits and revenues. Our ability to anticipate and respond to technological changes can also impact our ability to respond to customer needs and meet competitive demands.
- Business and operating results can also be affected by widespread natural and other disasters (including severe weather events), health emergencies, dislocations, geopolitical instabilities or events, terrorist activities, system failures or disruptions, security breaches, cyberattacks, international hostilities, or other extraordinary events beyond PNC's control through impacts on the economy and financial markets generally or on us or our counterparties, customers or third-party vendors and service providers specifically.

We provide greater detail regarding these as well as other factors in this Report, including in Item 1A Risk Factors, the Risk Management section of Item 7 and Note 21 Legal Proceedings. Our forward-looking statements may also be subject to other risks and uncertainties, including those discussed elsewhere in this Report or in our other filings with the SEC.

ITEM 7A – QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

This information is set forth in the Risk Management section of Item 7 and in Note 1 Accounting Policies, Note 15 Fair Value and Note 16 Financial Derivatives in the Notes to Consolidated Financial Statements in Item 8 of this Report.

ITEM 8 – FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of The PNC Financial Services Group, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheet of The PNC Financial Services Group, Inc. and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of income, of comprehensive income, of changes in equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for the allowance for credit losses in 2020.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Allowance for Loans and Lease Losses – Commercial Loans

As described in Notes 1 and 4 to the consolidated financial statements, the allowance for loans and lease losses was approximately $4,741 million as of December 31, 2022, of which $3,114 million relates to commercial loans. For commercial loans, the determination of the allowance is based on historical loss experience, current borrower risk characteristics, current economic conditions, reasonable and supportable economic forecasts and other relevant factors. As disclosed by management, the Company considers reasonable and supportable forecasts in estimating expected credit losses and has established a framework which includes the use of four economic scenarios with associated probability weights, which in combination create a forecast of expected economic outcomes over the reasonable and supportable forecast period. To generate the four economic forecast scenarios, the Company uses a combination of quantitative macroeconomic models, other measures of economic activity and forward-looking judgment to forecast the distribution of economic outcomes. Management used a number of economic variables in the scenarios, which are inputs into the loss forecasting models, with the most significant drivers being Real GDP and U.S. unemployment rate. Also included in the allowance for loan and lease losses for commercial loans are qualitative reserves to cover losses that are expected but, in the Company's assessment, may not be adequately represented in the quantitative methods or the economic assumptions. For example, qualitative factors may include industry concentration and conditions, changes in market conditions, changes in the nature and volume of the Company's portfolio, recent credit quality trends, recent loss experience in particular portfolios, recent macroeconomic factors, limitations of available input data, model imprecision, changes in lending policies, and other factors.

The principal considerations for our determination that performing procedures relating to the allowance for loan and lease losses for commercial loans is a critical audit matter are (i) the significant judgment and estimation by management in developing economic forecast scenarios of Real GDP and U.S. unemployment rate, determining weighting of each scenario, and estimating qualitative reserves, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and in evaluating audit evidence related to management's significant judgements and estimations and (ii) the audit effort involved professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the allowance for loan and lease losses for commercial loans, including controls over the development and approval of economic forecast scenarios, related weightings, and qualitative reserves. These procedures also included, among others, testing management's process for determining the allowance for loan and lease losses for commercial loans, including (i) evaluating the appropriateness and methodology of certain loss forecasting models, (ii) evaluating the reasonableness of certain borrower risk characteristics, (iii) evaluating the reasonableness of certain forecasted economic variables, including Real GDP and U.S. unemployment rate, (iv) evaluating the reasonableness of management's weighting of economic forecast scenarios used in the loss forecast models, (v) testing the completeness and accuracy of data used in the estimate, and (vi) evaluating certain qualitative reserves made to the model output results to determine the overall allowance for loan and lease losses for commercial loans. The procedures also included the involvement of professionals with specialized skill and knowledge to assist in evaluating certain models, model inputs, economic forecasts, and qualitative reserves in the allowance for commercial loans.

/s/ PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 22, 2023

We have served as the Company's auditor since 2007.

CONSOLIDATED INCOME STATEMENT

THE PNC FINANCIAL SERVICES GROUP, INC.

	Year ended December 31		
In millions, except per share data	2022	2021	2020
Interest Income			
Loans	$ 11,795	$ 9,007	$ 8,927
Investment securities	2,726	1,834	2,041
Other	915	293	339
Total interest income	15,436	11,134	11,307
Interest Expense			
Deposits	1,267	126	643
Borrowed funds	1,155	361	718
Total interest expense	2,422	487	1,361
Net interest income	13,014	10,647	9,946
Noninterest Income			
Asset management and brokerage	1,444	1,438	1,203
Capital markets and advisory	1,296	1,577	1,259
Card and cash management	2,633	2,398	1,913
Lending and deposit services	1,134	1,102	1,026
Residential and commercial mortgage	647	850	946
Other	952	1,199	608
Total noninterest income	8,106	8,564	6,955
Total revenue	21,120	19,211	16,901
Provision For (Recapture of) Credit Losses	477	(779)	3,175
Noninterest Expense			
Personnel	7,244	7,141	5,673
Occupancy	992	940	826
Equipment	1,395	1,411	1,176
Marketing	355	319	236
Other	3,184	3,191	2,386
Total noninterest expense	13,170	13,002	10,297
Income from continuing operations before income taxes and noncontrolling interests	7,473	6,988	3,429
Income taxes from continuing operations	1,360	1,263	426
Net income from continuing operations	6,113	5,725	3,003
Income from discontinued operations before taxes			5,777
Income taxes from discontinued operations			1,222
Net income from discontinued operations			4,555
Net income	6,113	5,725	7,558
Less: Net income attributable to noncontrolling interests	72	51	41
Preferred stock dividends	301	233	229
Preferred stock discount accretion and redemptions	5	5	4
Net income attributable to common shareholders	$ 5,735	$ 5,436	$ 7,284
Earnings Per Common Share			
Basic earnings from continuing operations	$ 13.86	$ 12.71	$ 6.37
Basic earnings from discontinued operations			10.62
Total basic earnings	$ 13.86	$ 12.71	$ 16.99
Diluted earnings from continuing operations	$ 13.85	$ 12.70	$ 6.36
Diluted earnings from discontinued operations			10.60
Total diluted earnings	$ 13.85	$ 12.70	$ 16.96
Average Common Shares Outstanding			
Basic	412	426	427
Diluted	412	426	427

See accompanying Notes To Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

THE PNC FINANCIAL SERVICES GROUP, INC.

	Year ended December 31		
In millions	2022	2021	2020
Net income from continuing operations	$ 6,113	$ 5,725	$ 3,003
Other comprehensive income (loss), before tax and net of reclassifications into Net income			
Net change in debt securities	(10,143)	(2,451)	1,811
Net change in cash flow hedge derivatives	(3,276)	(1,126)	497
Pension and other postretirement benefit plan adjustments	(363)	486	82
Net change in Other	(5)	4	10
Other comprehensive income (loss) from continuing operations, before tax and net of reclassifications into Net income	(13,787)	(3,087)	2,400
Income tax benefit (expense) from continuing operations related to items of other comprehensive income	3,206	726	(544)
Other comprehensive income (loss) from continuing operations, after tax and net of reclassifications into Net income	(10,581)	(2,361)	1,856
Net income from discontinued operations			4,555
Other comprehensive income from discontinued operations, before tax and net of reclassifications into Net income			148
Income tax expense from discontinued operations related to items of other comprehensive income			(33)
Other comprehensive income from discontinued operations, after tax and net of reclassifications into Net income			115
Other comprehensive income (loss), after tax and net of reclassifications into Net income	(10,581)	(2,361)	1,971
Comprehensive income (loss)	(4,468)	3,364	9,529
Less: Comprehensive income attributable to noncontrolling interests	72	51	41
Comprehensive income (loss) attributable to PNC	$ (4,540)	$ 3,313	$ 9,488

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED BALANCE SHEET

THE PNC FINANCIAL SERVICES GROUP, INC.

In millions, except par value	December 31 2022	December 31 2021
Assets		
Cash and due from banks	$ 7,043	$ 8,004
Interest-earning deposits with banks	27,320	74,250
Loans held for sale (a)	1,010	2,231
Investment securities – available for sale	44,159	131,536
Investment securities – held to maturity	95,175	1,426
Loans (a)	326,025	288,372
Allowance for loan and lease losses	(4,741)	(4,868)
Net loans	321,284	283,504
Equity investments	8,437	8,180
Mortgage servicing rights	3,423	1,818
Goodwill	10,987	10,916
Other (a)	38,425	35,326
Total assets	$ 557,263	$ 557,191
Liabilities		
Deposits		
Noninterest-bearing	$ 124,486	$ 155,175
Interest-bearing	311,796	302,103
Total deposits	436,282	457,278
Borrowed funds		
Federal Home Loan Bank borrowings	32,075	
Senior debt	16,657	20,661
Subordinated debt	6,307	6,996
Other (b)	3,674	3,127
Total borrowed funds	58,713	30,784
Allowance for unfunded lending related commitments	694	662
Accrued expenses and other liabilities	15,762	12,741
Total liabilities	511,451	501,465
Equity		
Preferred stock (c)		
Common stock ($5 par value, Authorized 800 shares, issued 543 shares)	2,714	2,713
Capital surplus	18,376	17,457
Retained earnings	53,572	50,228
Accumulated other comprehensive income (loss)	(10,172)	409
Common stock held in treasury at cost: 142 and 123 shares	(18,716)	(15,112)
Total shareholders' equity	45,774	55,695
Noncontrolling interests	38	31
Total equity	45,812	55,726
Total liabilities and equity	$ 557,263	$ 557,191

(a) Our consolidated assets included the following for which we have elected the fair value option: Loans held for sale of $0.9 billion, Loans of $1.3 billion and Other assets of $0.1 billion at December 31, 2022 and Loans held for sale of $1.9 billion, Loans of $1.5 billion and Other assets of $0.1 billion at December 31, 2021.

(b) Our consolidated liabilities included the following for which we have elected the fair value option: Other borrowed funds of less than $0.1 billion and Other liabilities of $0.2 billion at December 31, 2022. Comparable amounts at December 31, 2021 were less than $0.1 billion and zero.

(c) Par value less than $0.5 million at each date.

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

THE PNC FINANCIAL SERVICES GROUP, INC.

In millions	Shares Outstanding Common Stock	Shareholders' Equity						Noncontrolling Interests	Total Equity
		Common Stock	Capital Surplus - Preferred Stock	Capital Surplus - Common Stock and Other	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock		
Balance at December 31, 2019 (a)	433	$ 2,712	$ 3,993	$ 12,376	$ 42,215	$ 799	$ (12,781)	$ 29	$ 49,343
Cumulative effect of ASU adoptions (b)					(671)				(671)
Balance at January 1, 2020 (a)	433	$ 2,712	$ 3,993	$ 12,376	$ 41,544	$ 799	$ (12,781)	$ 29	$ 48,672
Net income					7,517			41	7,558
Other comprehensive income, net of tax						1,971			1,971
Cash dividends declared - Common					(1,980)				(1,980)
Cash dividends declared - Preferred					(229)				(229)
Preferred stock discount accretion			4		(4)				
Common stock activity (c)		1		23					24
Treasury stock activity	(9)			54			(1,424)		(1,370)
Preferred stock redemption (d)			(480)						(480)
Other				(86)				(39)	(125)
Balance at December 31, 2020 (a)	424	$ 2,713	$ 3,517	$ 12,367	$ 46,848	$ 2,770	$ (14,205)	$ 31	$ 54,041
Net income					5,674			51	5,725
Other comprehensive income (loss), net of tax						(2,361)			(2,361)
Cash dividends declared - Common					(2,056)				(2,056)
Cash dividends declared - Preferred					(233)				(233)
Preferred stock discount accretion			5		(5)				
Preferred stock issuance (e)			1,487						1,487
Common stock activity (c)				25					25
Treasury stock activity	(4)			84			(907)		(823)
Other				(28)				(51)	(79)
Balance at December 31, 2021 (a)	420	$ 2,713	$ 5,009	$ 12,448	$ 50,228	$ 409	$ (15,112)	$ 31	$ 55,726
Net income					6,041			72	6,113
Other comprehensive income (loss), net of tax						(10,581)			(10,581)
Cash dividends declared - Common					(2,391)				(2,391)
Cash dividends declared - Preferred					(301)				(301)
Preferred stock discount accretion			5		(5)				
Preferred stock issuance (f) (g)			2,232						2,232
Common stock activity (c)		1		30					31
Treasury stock activity	(19)			61			(3,604)		(3,543)
Preferred stock redemption (h)			(1,500)						(1,500)
Other				91				(65)	26
Balance at December 31, 2022 (a)	401	$ 2,714	$ 5,746	$ 12,630	$ 53,572	$ (10,172)	$ (18,716)	$ 38	$ 45,812

(a) The par value of our preferred stock outstanding was less than $0.5 million at each date and, therefore, is excluded from this presentation.
(b) Represents the impact of the adoption of ASU 2016-13 - *Financial Instruments - Credit Losses*.
(c) Common stock activity totaled less than 0.5 million shares issued.
(d) On September 1, 2020, PNC redeemed all 4,800 shares of its Series Q preferred stock, as well as all 19.2 million depositary shares representing a fractional interest in such shares.
(e) On September 13, 2021, PNC issued 1,500,000 depositary shares each representing 1/100th ownership in a share of 3.400% fixed-rate reset non-cumulative perpetual preferred stock, Series T, with a par value of $1 per share.
(f) On April 26, 2022, PNC issued 1,000,000 depositary shares each representing 1/100th ownership in a share of 6.000% fixed-rate reset non-cumulative perpetual preferred stock, Series U, with a par value of $1 per share.
(g) On August 19, 2022, PNC issued 1,250,000 depositary shares each representing 1/100th ownership in a share of 6.200% fixed-rate reset non-cumulative perpetual preferred stock, Series V, with a par value of $1 per share.
(h) On November 1, 2022, PNC redeemed all 15,000 shares of its Series P preferred stock, as well as all 60 million depositary shares each representing a fractional interest in such shares.

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CASH FLOWS
THE PNC FINANCIAL SERVICES GROUP, INC.

	Year ended December 31		
In millions	2022	2021	2020
Operating Activities			
Net income	$ 6,113	$ 5,725	$ 7,558
Adjustments to reconcile net income to net cash provided (used) by operating activities			
Provision for (recapture of) credit losses	477	(779)	3,175
Depreciation, amortization and accretion	651	1,773	1,497
Deferred income taxes (benefit)	351	178	(2,239)
Net losses (gains) on sales of securities	7	(64)	(305)
Changes in fair value of mortgage servicing rights	(543)	85	799
Gain on sale of BlackRock			(5,740)
Undistributed earnings of BlackRock			(174)
Net change in			
Trading securities and other short-term investments	433	671	957
Loans held for sale and related securitization activity	1,041	(480)	(372)
Other assets	(877)	(454)	(927)
Accrued expenses and other liabilities	599	753	(254)
Other	831	(194)	684
Net cash provided (used) by operating activities	$ 9,083	$ 7,214	$ 4,659
Investing Activities			
Sales			
Securities available for sale	$ 4,137	$ 26,329	$ 13,851
Net proceeds from sale of BlackRock			14,225
Loans	5,643	1,843	1,894
Repayments/maturities			
Securities available for sale	13,324	30,691	30,901
Securities held to maturity	5,115	131	60
Purchases			
Securities available for sale	(25,582)	(85,496)	(45,356)
Securities held to maturity	(15,423)	(87)	(53)
Loans	(2,074)	(1,891)	(1,982)
Net change in			
Federal funds sold and resale agreements	(718)	(24)	1,738
Interest-earning deposits with banks	46,930	24,236	(61,760)
Loans	(41,735)	15,616	(3,376)
Net cash paid for acquisition		(10,511)	
Purchases of bank owned life insurance	(50)	(950)	
Other	(2,995)	(2,682)	(1,264)
Net cash provided (used) by investing activities	$ (13,428)	$ (2,795)	$ (51,122)

CONSOLIDATED STATEMENT OF CASH FLOWS
THE PNC FINANCIAL SERVICES GROUP, INC.

(Continued from previous page) In millions	Year ended December 31 2022	2021	2020
Financing Activities			
Net change in			
Noninterest-bearing deposits	$ (30,662)	$ 6,697	$ 39,851
Interest-bearing deposits	9,693	(320)	36,947
Federal funds purchased and repurchase agreements	(2)	(46)	(5,861)
Short-term Federal Home Loan Bank borrowings			(6,300)
Other borrowed funds	636	44	123
Sales/issuances			
Federal Home Loan Bank borrowings	32,075		9,060
Senior debt	3,688	1,692	3,487
Subordinated debt	847		
Other borrowed funds	796	822	647
Preferred stock	2,225	1,484	
Common and treasury stock	68	66	65
Repayments/maturities			
Federal Home Loan Bank borrowings		(3,680)	(15,601)
Senior debt	(6,250)	(6,000)	(9,047)
Subordinated debt	(1,000)		
Other borrowed funds	(807)	(823)	(639)
Preferred stock redemption	(1,500)		(480)
Acquisition of treasury stock	(3,731)	(1,079)	(1,624)
Preferred stock cash dividends paid	(301)	(233)	(229)
Common stock cash dividends paid	(2,391)	(2,056)	(1,980)
Net cash provided (used) by financing activities	$ 3,384	$ (3,432)	$ 48,419
Net Increase (Decrease) In Cash And Due From Banks And Restricted Cash	$ (961)	$ 987	$ 1,956
Net Cash Provided By Discontinued Operations			11,542
Net Cash Provided (Used) By Continuing Operations	(961)	987	(9,586)
Cash and due from banks and restricted cash at beginning of period	8,004	7,017	5,061
Cash and due from banks and restricted cash at end of period	$ 7,043	$ 8,004	$ 7,017
Cash And Due From Banks And Restricted Cash			
Cash and due from banks at end of period (unrestricted cash)	$ 6,446	$ 7,431	$ 6,636
Restricted cash	597	573	381
Cash and due from banks and restricted cash at end of period	$ 7,043	$ 8,004	$ 7,017
Supplemental Disclosures			
Interest paid	$ 2,172	$ 582	$ 1,292
Income taxes paid	$ 197	$ 675	$ 3,410
Income taxes refunded	$ 26	$ 73	$ 10
Leased assets obtained in exchange for new operating lease liabilities	$ 326	$ 337	$ 122
Non-cash Investing And Financing Items			
Transfer from securities available for sale to securities held to maturity (a)	$ 88,605		
Transfer from trading securities to investment securities			$ 289
Transfer from loans to loans held for sale, net	$ 435	$ 869	$ 1,379
Transfer from loans to foreclosed assets	$ 58	$ 27	$ 64

(a) During the year ended December 31, 2022, we transferred securities from available for sale to held to maturity in non-cash transactions. The amount of $88.6 billion includes the aggregate fair value of the securities of $82.7 billion and aggregate net pretax unrealized losses of $5.9 billion included in AOCI at transfer. See Note 3 Investment Securities for more detailed information on the transfers.

See accompanying Notes to Consolidated Financial Statements.

See the Glossary on page 194 for additional information on certain terms and acronyms used throughout the Financial Statements and related Notes.

BUSINESS

PNC is one of the largest diversified financial services companies in the U.S. and is headquartered in Pittsburgh, Pennsylvania.

We have businesses engaged in retail banking, including residential mortgage, corporate and institutional banking and asset management, providing many of our products and services nationally. Our retail branch network is located coast-to-coast. We also have strategic international offices in four countries outside the U.S.

NOTE 1 ACCOUNTING POLICIES

Basis of Financial Statement Presentation

Our consolidated financial statements include the accounts of the parent company and its subsidiaries, most of which are wholly-owned, certain partnership interests and VIEs.

On June 1, 2021, we acquired BBVA, a U.S. financial holding company conducting its business operations primarily through its U.S. banking subsidiary, BBVA USA. Our results of operations and balance sheets for all periods presented in this Report reflect the benefit of BBVA's acquired businesses for the period since the acquisition closed on June 1, 2021. See Note 2 Acquisition and Divestiture Activity for additional information related to this acquisition.

We prepared these consolidated financial statements in accordance with GAAP. We have eliminated intercompany accounts and transactions. We have also reclassified certain prior-year amounts to conform to the current period presentation, which did not have a material impact on our consolidated financial condition or results of operations.

We have also considered the impact of subsequent events on these consolidated financial statements.

Noninterest Income Presentation

Effective for the first quarter of 2022, PNC updated the presentation of its noninterest income categorization to be based on product and service type, and accordingly, has changed the basis of presentation of its noninterest income revenue streams to: (i) Asset management and brokerage, (ii) Capital markets related, (iii) Card and cash management, (iv) Lending and deposit services, (v) Residential and commercial mortgage and (vi) Other noninterest income. Additionally, in the fourth quarter of 2022, PNC updated the name of the noninterest income line item "Capital markets related" to "Capital markets and advisory." This update did not impact the components of the category. A description of each revenue stream follows:

Asset management and brokerage includes revenue from our asset management and retail brokerage businesses. Asset management services include investment management, custody, retirement planning, family planning, trust management and retirement administration. Brokerage services offer retail customers a wide range of investment options, including mutual funds, annuities, stock, bonds and managed accounts.

Capital markets and advisory includes revenue from services and activities primarily related to merger and acquisition advisory, equity capital markets advisory, asset-backed financing, loan syndication, securities underwriting, credit valuation adjustments related to the derivatives portfolio and customer-related trading.

Card and cash management includes revenue primarily from debit and credit card activities, inclusive of credit card points and rewards, treasury management services and ATM fees. Debit and credit card activities include interchange revenue and merchant service fees. Treasury management services include cash and investment management, receivables and disbursement management, funds transfer, international payment and access to online/mobile information management and reporting.

Lending and deposit services includes revenue primarily related to service charges on deposits, loan commitment and usage fees, the issuance of standby letters of credit, operating lease income and long-term care and insurance products.

Residential and commercial mortgage includes the gain and loss on sale of mortgages, revenue related to our mortgage servicing responsibilities, mortgage servicing rights valuation adjustments and net gains on originations and sales of loans held for sale.

Other noninterest income is primarily composed of private equity revenue, net securities gains and losses, activity related to our equity investment in Visa and gains and losses on asset sales.

See Note 24 Fee-based Revenue from Contracts with Customers for additional details related to these revenue streams within the scope of ASC 606 - *Revenue from Contracts with Customers*.

Use of Estimates

We prepared these consolidated financial statements using financial information available at the time of preparation, which requires us to make estimates and assumptions that affect the amounts reported. Our most significant estimates pertain to the ACL and our fair value measurements, including for the BBVA acquisition. Actual results may differ from the estimates and the differences may be material to the consolidated financial statements.

Cash, Cash Equivalents and Restricted Cash

Cash and due from banks are considered cash and cash equivalents for financial reporting purposes because they represent a primary source of liquidity. Certain cash balances within Cash and due from banks on our Consolidated Balance Sheet are restricted as to withdrawal or usage by legally binding contractual agreements or regulatory requirements.

Investments

We hold interests in various types of investments. The accounting for these investments is dependent on a number of factors including, but not limited to, items such as:

- Ownership interest,
- Our plans for the investment, and
- The nature of the investment.

Debt Securities

Debt securities are recorded on a trade-date basis. We classify debt securities as either trading, held to maturity, or available for sale. Debt securities that we purchase for certain risk management activities or customer-related trading activities are classified as trading securities, are reported in the Other assets line item on our Consolidated Balance Sheet and are carried at fair value. Realized and unrealized gains and losses on trading securities are included in Other noninterest income. We classify debt securities as held to maturity when we have the positive intent and ability to hold the securities to maturity, and carry them at amortized cost, less any allowance. Debt securities not classified as held to maturity or trading are classified as securities available for sale and are carried at fair value. Unrealized gains and losses on available for sale securities are included in AOCI net of income taxes.

We include all interest on debt securities, including amortization of premiums and accretion of discounts on investment securities, in net interest income using the constant effective yield method generally calculated over the contractual lives of the securities. Effective yields reflect either the effective interest rate implicit in the security at the date of acquisition or, for debt securities where an OTTI was recorded, the effective interest rate determined based on improved cash flows subsequent to an impairment. We compute gains and losses realized on the sale of available for sale debt securities on a specific security basis. These securities gains and losses are included in Other noninterest income on the Consolidated Income Statement.

The CECL standard requires expected credit losses on both held to maturity and available for sale securities to be recognized through a valuation allowance, ACL, instead of as a direct write-down to the amortized cost basis of the security. An available for sale security is considered impaired if the fair value is less than its amortized cost basis. If any portion of the decline in fair value is related to credit, the amount of allowance is determined as the portion related to credit, limited to the difference between the amortized cost basis and the fair value of the security. If we have the intent to sell or believe it is more likely than not we will be required to sell an impaired available for sale security before recovery of the amortized cost basis, the credit loss is recorded as a direct write-down of the amortized cost basis. Credit losses on investment securities are recognized through the Provision for credit losses on our Consolidated Income Statement. Declines in the fair value of available for sale securities that are not considered credit related are recognized in AOCI on our Consolidated Balance Sheet.

We consider a security to be past due in terms of payment based on its contractual terms. A security may be placed on nonaccrual, with interest no longer recognized until received, when collectability of principal or interest is doubtful. As of December 31, 2022, nonaccrual or past due held-to-maturity and available-for-sale securities were immaterial.

A security may be partially or fully charged off against the allowance if it is determined to be uncollectible, including, for an available for sale security, if we have the intent to sell or believe it is more likely than not we will be required to sell the security before recovery of the amortized cost basis. Recoveries of previously charged-off available for sale securities are recognized when received, while recoveries on held to maturity securities are recognized when expected.

See the Allowance for Credit Losses section of this Note 1 for further discussion regarding the methodologies used to determine the allowance for investment securities. See Note 3 Investment Securities for additional information about the investment securities portfolio and the related ACL.

Equity Securities and Partnership Interests

We account for equity securities, equity investments, private equity investments, and investments in limited partnerships, limited liability companies and other investments that are not required to be consolidated under one of the following methods:

- We use the equity method for general and limited partner ownership interests and limited liability companies in which we are considered to have significant influence over the operations of the investee. Under the equity method, we record our equity ownership share of net income or loss of the investee in Noninterest income and any dividends received on equity method investments are recorded as a reduction to the investment balance. When an equity investment experiences an other-than-temporary decline in value, we may be required to record a loss on the investment.
- We measure equity securities that have a readily determinable fair value at fair value through Net income. Both realized and unrealized gains and losses are included in Noninterest income. Dividend income on these equity securities is included in Other interest income on our Consolidated Income Statement.
- We generally use the practicability exception to fair value measurement for all other investments without a readily determinable fair value. When we elect this alternative measurement method, the investment is recorded at cost and the carrying value is adjusted for impairment, if any, plus or minus changes in value resulting from observable price changes in orderly transactions for identical or similar instruments of the same issuer. Adjustments to fair value based on changes in observable price are recorded in Other noninterest income. These investments are written down to fair value if a qualitative assessment indicates impairment and the fair value is less than the carrying value. The amount of the write-down is accounted for as a loss included in Other noninterest income. Distributions received on these investments are included in Noninterest income.

Investments described above are included in Equity investments on our Consolidated Balance Sheet.

Private Equity Investments

We report private equity investments, which include direct investments in companies, affiliated partnership interests and indirect investments in private equity funds, at estimated fair value. These estimates are based on available information and may not necessarily represent amounts that we will ultimately realize through distribution, sale or liquidation of the investments. Fair values of publicly-traded direct investments are determined using quoted market prices and are subject to various discount factors arising from security level restrictions, when appropriate. The valuation procedures applied to direct investments and indirect investments are detailed in Note 15 Fair Value. We include all private equity investments within Equity investments on our Consolidated Balance Sheet. Changes in fair value of private equity investments are recognized in Other noninterest income.

We consolidate affiliated partnerships when we have determined that we have control of the partnership or are the primary beneficiary if the entity is a VIE. The portion we do not own is reflected in Noncontrolling interests on our Consolidated Balance Sheet.

Loans

Loans are classified as held for investment when management has both the intent and ability to hold the loan for the foreseeable future, or until maturity or payoff. Management's intent and view of the foreseeable future may change based on changes in business strategies, the economic environment, market conditions and the availability of government programs.

Measurement of delinquency status is based on the contractual terms of each loan. Loans that are 30 days or more past due in terms of payment are considered delinquent. See Note 4 Loans and Related Allowance for Credit Losses for additional information on how COVID-19 hardship related loan modifications are reported from a delinquency perspective as of December 31, 2022 and 2021.

Loans held for investment, excluding PCD loans, are recorded at amortized cost basis unless we elect to measure these under the fair value option. Amortized cost basis represents principal amounts outstanding, net of unearned income, unamortized deferred fees and costs on originated loans, premiums or discounts on purchased loans and charge-offs. Amortized cost basis does not include accrued interest, as we include accrued interest in Other assets on our Consolidated Balance Sheet. Interest on performing loans is accrued based on the principal amount outstanding and recorded in Interest income as earned using the constant effective yield method over the contractual life. Loan origination fees, direct loan origination costs, and loan premiums and discounts are deferred and accreted or amortized into Net interest income using the constant effective yield method, over the contractual life of the loan. The processing fee received for loans originated through PPP lending under the CARES Act is deferred and accreted into Net interest income using the effective yield method, over the contractual life of the loan. Loans under the fair value option are reported at their fair value, with any changes to fair value reported as Noninterest income on the Consolidated Income Statement, and are excluded from measurement of ALLL.

In addition to originating loans, we also acquire loans through the secondary loan market, portfolio purchases or acquisitions of other financial services companies. Certain acquired loans that have experienced a more-than-insignificant deterioration of credit quality since origination (*i.e.*, PCD) are recognized at an amortized cost basis equal to their purchase price plus an ALLL measured at the acquisition date. PNC considers a variety of factors in connection with the identification of more-than-insignificant deterioration in credit quality, including but not limited to nonperforming status, delinquency, risk ratings, TDR classification and other qualitative factors that indicate deterioration in credit quality since origination. Subsequent decreases in expected cash flows that are attributable, at least in part, to credit quality are recognized through a charge to the provision for credit losses resulting in an increase in the ALLL. Subsequent increases in expected cash flows are recognized as a provision recapture of previously recorded ALLL.

We consider a loan to be collateral dependent when we determine that substantially all of the expected cash flows will be generated from the operation or sale of the collateral underlying the loan, or when the borrower is experiencing financial difficulty and we have elected to measure the loan at the estimated fair value of collateral (less costs to sell if sale or foreclosure of the property is expected). Additionally, we consider a loan to be collateral dependent when foreclosure or liquidation of the underlying collateral is probable.

A TDR is a loan whose terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulty. A concession has been granted when we do not expect to collect all amounts due, including original interest accrued at the original contract rate, as a result of the restructuring, or there is a delay in payment that is more-than-insignificant. TDRs result from our loss mitigation activities, and include rate reductions, principal forgiveness, postponement/reduction of scheduled amortization, and extensions, which are intended to minimize economic loss and to avoid foreclosure or repossession of collateral. Additionally, TDRs also result from borrowers that have been discharged from personal liability through Chapter 7 bankruptcy and have not formally reaffirmed their loan obligations to us. In those situations where principal is forgiven, the amount of such principal forgiveness is immediately charged off.

Potential incremental losses or recoveries on TDRs have been factored into the ALLL estimates for each loan class under the methodologies described in this Note. Once a loan becomes a TDR, it will continue to be reported as a TDR until it is ultimately repaid in full, the collateral is foreclosed upon or it is fully charged off.

PNC excludes loans held for sale, loans accounted for under the fair value option and certain government insured or guaranteed loans from our TDR population. PCD loans do not require additional considerations and thus are evaluated for inclusion in our TDR population. Prior to the expiration of TDR relief on January 1, 2022, PNC elected not to apply a TDR designation to loans that were restructured due to a COVID-19 hardship pursuant to specific criteria under the CARES Act. Since loans restructured due to a COVID-19 related hardship were not identified as TDRs, they were not placed on nonaccrual at the time of modification unless payment in full of principal or interest was not expected. These loans continued to be subject to our existing nonaccrual policy.

See the following for additional information related to loans, including further discussion regarding our policies, the methodologies and significant inputs used to determine the ALLL and additional details on the composition of our loan portfolio:

- Nonperforming Loans and Leases section of this Note 1,
- Allowance for Credit Losses section of this Note 1, and
- Note 4 Loans and Related Allowance for Credit Losses.

Nonperforming Loans and Leases

The matrix that follows summarizes our policies for classifying certain loans as nonperforming loans and/or discontinuing the accrual of loan interest income.

Commercial	
Loans classified as nonperforming and accounted for as nonaccrual	• Loans accounted for at amortized cost where: – The loan is 90 days or more past due. – The loan is rated substandard or worse due to the determination that full collection of principal and interest is not probable as demonstrated by the following conditions: • The collection of principal or interest is 90 days or more past due, • Reasonable doubt exists as to the certainty of the borrower's future debt service ability, according to the terms of the credit arrangement, regardless of whether 90 days have passed or not, • The borrower has filed or will likely file for bankruptcy, • The bank advances additional funds to cover principal or interest, • We are in the process of liquidating a commercial borrower or • We are pursuing remedies under a guarantee.
Loans excluded from nonperforming classification but accounted for as nonaccrual	• Loans accounted for under the fair value option and full collection of principal and interest is not probable. • Loans accounted for at the lower of cost or market less costs to sell (held for sale) and full collection of principal and interest is not probable.
Loans excluded from nonperforming classification and nonaccrual accounting	• Loans that are well secured and in the process of collection. • Certain government insured loans where substantially all principal and interest is insured. • Commercial purchasing card assets which do not accrue interest.

Consumer	
Loans classified as nonperforming and accounted for as nonaccrual	• Loans accounted for at amortized cost where full collection of contractual principal and interest is not deemed probable as demonstrated in the policies below: – The loan is 90 days past due for home equity and installment loans, and 180 days past due for well secured residential real estate loans, – The loan has been modified and classified as a TDR, – The loan has been modified to defer prior payments in forbearance to the end of the loan term, – Notification of bankruptcy has been received, – The bank holds a subordinate lien position in the loan and the first lien mortgage loan is seriously stressed (*i.e.*, 90 days or more past due), – Other loans within the same borrower relationship have been placed on nonaccrual or charge-offs have been taken on them, – The bank has ordered the repossession of non-real estate collateral securing the loan or – The bank has charged-off the loan to the value of the collateral.
Loans excluded from nonperforming classification but accounted for as nonaccrual	• Loans accounted for under the fair value option and full collection of principal and interest is not probable. • Loans accounted for at the lower of cost or market less costs to sell (held for sale) and full collection of principal and interest is not probable.
Loans excluded from nonperforming classification and nonaccrual accounting	• Certain government insured loans where substantially all principal and interest is insured. • Residential real estate loans that are well secured and in the process of collection. • Consumer loans and lines of credit, not secured by residential real estate or automobiles, as permitted by regulatory guidance.

Commercial

We generally charge-off commercial (commercial and industrial, commercial real estate and equipment lease financing) nonperforming loans when we determine that a specific loan, or portion thereof, is uncollectible. This determination is based on the specific facts and circumstances of the individual loans. In making this determination, we consider the viability of the business or project as a going concern, the past due status when the asset is not well-secured, the expected cash flows to repay the loan, the value of the collateral and the ability and willingness of any guarantors to perform. For commercial loans and leases less than a defined dollar threshold, balances are charged-off in full after pre-determined days past due.

Consumer

We generally charge-off secured consumer (home equity, residential real estate and automobile) nonperforming loans to the fair value of collateral less costs to sell, if lower than the amortized cost basis of the loan outstanding, when delinquency of the loan, combined with other risk factors (*e.g.*, bankruptcy, lien position or troubled debt restructuring), indicates that the loan, or some portion thereof, is uncollectible as per our historical experience, or the collateral has been repossessed. We charge-off secured consumer loans no later than 180 days past due. Most consumer loans and lines of credit, not secured by automobiles or residential real estate, are charged-off once they have reached 120-180 days past due.

For secured collateral dependent loans, collateral values are updated at least annually and subsequent declines in collateral values are charged-off resulting in incremental provision for credit loss. Subsequent increases in collateral values may be reflected as an adjustment to the ALLL to reflect the expectation of recoveries in an amount greater than previously expected, limited to amounts previously charged-off.

Accounting for Nonperforming Assets and Leases and Other Nonaccrual Loans

For nonaccrual loans, interest income accrual and deferred fee/cost recognition is discontinued. Additionally, depending on whether the accrued interest has been incorporated into the ACL estimates, as discussed in the Accrued Interest section of this Note 1, the accrued and uncollected interest is either reversed through Net interest income (if a CECL reserve is not maintained for accrued interest) or charged-off against the allowance (if a CECL reserve is maintained for accrued interest), except for credit cards, where we reverse any accrued interest through Net interest income at the time of charge-off, as per industry standard practice. Nonaccrual loans that are also collateral dependent may be charged-off to reduce the basis to the fair value of collateral less costs to sell.

If payment is received on a nonaccrual loan, generally the payment is first applied to the remaining principal balance; payments are then applied to recover any charged-off amounts related to the loan. Finally, if both principal balance and any charge-offs have been recovered, then the payment will be recorded as fee and interest income. For certain consumer loans, the receipt of interest payments is recognized as interest income on a cash basis. Cash basis income recognition is applied if a loan's amortized cost basis is deemed fully collectible and the loan has performed for at least six months.

For TDRs, payments are applied based upon their contractual terms unless the related loan is deemed non-performing. TDRs are generally included in nonperforming and nonaccrual loans. However, after a reasonable period of time, generally six months, in which the loan performs under restructured terms and meets other performance indicators, it is returned to performing/accruing status. This return to performing/accruing status demonstrates that the bank expects to collect all of the loan's remaining contractual principal and interest. TDRs resulting from (i) borrowers that have been discharged from personal liability through Chapter 7 bankruptcy and have not formally reaffirmed their loan obligations to us, and (ii) borrowers that are not currently obligated to make both principal and interest payments under the restructured terms are not returned to accrual status.

Other nonaccrual loans are generally not returned to accrual status until the borrower has performed in accordance with the contractual terms and other performance indicators for at least six months, the period of time which was determined to demonstrate the expected collection of the loan's remaining contractual principal and interest. Nonaccrual loans with partially charged-off principal are not returned to accrual. When a nonperforming loan is returned to accrual status, it is then considered a performing loan.

Foreclosed assets consist of any asset seized or property acquired through a foreclosure proceeding or acceptance of a deed-in-lieu of foreclosure. OREO comprises principally commercial and residential real estate properties obtained in partial or total satisfaction of loan obligations. After obtaining a foreclosure judgment, or in some jurisdictions the initiation of proceedings under a power of sale in the loan instruments, the property will be sold. When we are awarded title or completion of deed-in-lieu of foreclosure, we transfer the loan to foreclosed assets included in Other assets on our Consolidated Balance Sheet. Property obtained in satisfaction of a loan is initially recorded at estimated fair value less cost to sell. Based upon the estimated fair value less cost to sell, the amortized cost basis of the loan is adjusted and a charge-off/recovery is recognized to the ALLL. We estimate fair values primarily based on appraisals, or sales agreements with third parties. Subsequently, foreclosed assets are valued at the lower of the amount recorded at acquisition date or estimated fair value less cost to sell. Valuation adjustments on these assets and gains or losses realized from disposition of such property are reflected in Other noninterest expense.

For certain mortgage loans that have a government guarantee, we establish a separate other receivable upon foreclosure. The receivable is measured based on the loan balance (inclusive of principal and interest) that is expected to be recovered from the guarantor.

See Note 4 Loans and Related Allowance for Credit Losses for additional information on nonperforming assets, TDRs and credit quality indicators related to our loan portfolio.

Allowance for Credit Losses

Our ACL, in accordance with the CECL standard adopted on January 1, 2020, is based on historical loss experience, current borrower risk characteristics, current economic conditions, reasonable and supportable forecasts of future conditions and other relevant factors. We maintain the ACL at an appropriate level for expected losses on our existing investment securities, loans, equipment finance leases, other financial assets and unfunded lending related commitments, for the estimated contractual term of the assets or exposures as of the balance sheet date. The remaining contractual term of assets in scope of CECL is estimated considering contractual maturity dates, prepayment expectations, utilization or draw expectations and any embedded extension options that do not allow us to unilaterally cancel the extension options. For products without a fixed contractual maturity date (*e.g.*, credit cards), we rely on historical payment behavior to determine the length of the paydown or default time period.

We estimate expected losses on a pooled basis using a combination of (i) the expected losses over a reasonable and supportable forecast period, (ii) a period of reversion to long-run average expected losses where applicable and (iii) the long run average expected losses for the remaining estimated contractual term. For all assets and unfunded lending related commitments in the scope of CECL, the ACL also includes individually assessed reserves and qualitative reserves, as applicable.

We use forward-looking information in estimating expected credit losses for our reasonable and supportable forecast period. For this purpose, we use forecasted scenarios produced by PNC's Economics Team, which are designed to reflect business cycles and their related estimated probabilities. The forecast length that we have determined to be reasonable and supportable is three years. As noted in the methodology discussions that follow, forward-looking information is incorporated into the expected credit loss estimates. Such forward looking information includes forecasted relevant macroeconomic variables, which are estimated using quantitative macroeconomic models, analysis from PNC economists and management judgment.

The reversion period is used to bridge our three year reasonable and supportable forecast period and the long run average expected credit losses. We consider a number of factors in determining the duration of the reversion period, such as contractual maturity of the asset, observed historical patterns and the estimated credit loss rates at the end of the forecast period relative to the beginning of the long run average period. The reversion period is typically 1-3 years, if not immediate.

The long-run average expected credit losses are derived from long run historical credit loss information adjusted for the credit quality of the current portfolio, and therefore do not consider current and forecasted economic conditions.

See the following sections related to investment securities, loans, trade receivables, other financial assets and unfunded lending related commitments for details about specific methodologies.

Allowance for Investment Securities

A significant portion of our investment securities are issued or guaranteed by either the U.S. government (U.S. Treasury or GNMA) or a government-sponsored agency (FNMA or FHLMC). Taking into consideration historical information and current and forecasted conditions, we do not expect to incur any credit losses on these securities.

Investment securities that are not issued or guaranteed by the U.S. government or a government-sponsored agency consist of both securitized products, such as non-agency mortgage and asset-backed securities, as well as non-securitized products, such as corporate and municipal debt securities. A discounted cash flow approach is primarily used to determine the amount of the allowance required. The estimates of expected cash flows are determined using macroeconomic sensitive models taking into consideration the reasonable and supportable forecast period and scenarios discussed above. Additional factors unique to a specific security may also be taken into consideration when estimating expected cash flows. The cash flows expected to be collected, after considering expected prepayments, are discounted at the effective interest rate. For an available-for-sale security, the amount of the allowance is limited to the difference between the amortized cost basis of the security and its estimated fair value.

See Note 3 Investment Securities for additional information about the investment securities portfolio.

Allowance for Loan and Lease Losses

Our pooled expected loss methodology is based upon the quantification of risk parameters, such as PD, LGD and EAD for a loan, loan segment or lease. We also consider the impact of prepayments and amortization on contractual maturity in our expected loss estimates. We use historical credit loss information, current borrower risk characteristics and forecasted economic variables for the reasonable and supportable forecast period, coupled with analytical methods, to estimate these risk parameters by loan, loan segment or lease. PD, LGD and EAD parameters are calculated for each forecasted scenario and the long run average period, and combined to generate expected loss estimates by scenario. The following matrix provides key credit risk characteristics that we use to estimate these risk parameters.

Loan Class	Probability of Default	Loss Given Default	Exposure at Default
Commercial			
Commercial and industrial / Equipment lease financing	• For wholesale obligors: internal risk ratings based on borrower characteristics and industry • For retail small balance obligors: credit score, delinquency status, and product type	• Collateral type, collateral value, industry, size and outstanding exposure for secured loans • Capital structure, industry and size for unsecured loans • For retail small balance obligors, product type and credit scores	• Outstanding balances, commitment, contractual maturities and historical prepayment experience for loans • Current utilization and historical pre-default draw experience for lines
Commercial real estate	• Property performance metrics, property type, market and risk pool for the forecast period • For the long run average period, internal risk ratings based on borrower characteristics	• Property values and anticipated liquidation costs	• Outstanding balances, commitment, contractual maturities and historical prepayment experience for loans
Consumer			
Home equity / Residential real estate	• Borrower credit scores, delinquency status, origination vintage, LTV and contractual maturity	• Collateral characteristics, LTV and costs to sell	• Outstanding balances, contractual maturities and historical prepayment experience for loans • Current utilization and historical pre-default draw experience for lines
Automobile	• Borrower credit scores, delinquency status, borrower income, LTV and contractual maturity	• New vs. used, LTV and borrower credit scores	• Outstanding balances, contractual maturities and historical prepayment experience
Credit card	• Borrower credit scores, delinquency status, utilization, payment behavior and months on book	• Borrower credit scores and credit line amount	• Pay-down curves are developed using a pro-rata method and estimated using borrower behavior segments, payment ratios and borrower credit scores
Education / Other consumer	• Net charge-off and pay-down rates by vintage are used to estimate expected losses in lieu of discrete risk parameters		

The following matrix describes the key economic variables that are consumed during our forecast period by loan class, as well as other assumptions that are used for our reversion and long run average approaches.

Loan Class	Forecast Period - Key Economic Variables	Reversion Method	Long Run Average
Commercial			
Commercial and industrial / Equipment lease financing	• GDP and Gross Domestic Investment measures, employment related variables and personal income and consumption measures	• Immediate reversion	• Average parameters determined based on internal and external historical data • Modeled parameters using long run economic conditions for retail small balance obligors
Commercial real estate	• CRE Price Index, unemployment rates, GDP, corporate bond yield and interest rates	• Immediate reversion	• Average parameters determined based on internal and external historical data
Consumer			
Home equity / Residential real estate	• Unemployment rates, HPI and interest rates	• Straight-line over 3 years	• Modeled parameters using long run economic conditions
Automobile	• Unemployment rates, HPI, personal consumption expenditure and Manheim used car index	• Straight-line over 1 year	• Average parameters determined based on internal and external historical data
Credit card	• Unemployment rates, personal consumption expenditure and HPI	• Straight-line over 2 years	• Modeled parameters using long run economic conditions
Education / Other consumer	• Net charge-off and pay-down rates by vintage are used to estimate expected losses in lieu of discrete risk parameters		

After the forecast period, we revert to the long run average over the reversion period noted above, which is the period between the end of the forecast period and when losses are estimated to have completely reverted to the long run average.

Once we have developed a combined estimate of credit losses (*i.e.*, for the forecast period, reversion period and long run average) under each of the forecasted scenarios, we produce a probability-weighted credit loss estimate by loan class. We then add or deduct any qualitative components and other adjustments, such as individually assessed loans, to produce the ALLL. See the Individually Assessed Component and Qualitative Component discussions that follow in this Note 1 for additional information about those adjustments.

Discounted Cash Flow

In addition to TDRs, we also use a discounted cash flow methodology for our home equity and residential real estate loan classes. We determine effective interest rates considering contractual cash flows adjusted for estimated prepayments. Changes in the ALLL due to the impact of the passage of time under the discounted cash flow estimate are recognized through the provision for credit losses.

Individually Assessed Component

Loans and leases that do not share similar risk characteristics with a pool of loans are individually assessed as follows:

- For commercial nonperforming loans greater than or equal to a defined dollar threshold, reserves are based on an analysis of the present value of the loan's expected future cash flows or the fair value of the collateral, if appropriate under our policy for collateral dependent loans. Nonperforming commercial loans below the defined threshold, and accruing TDRs are reserved for under a pooled basis.
- For consumer nonperforming loans classified as collateral dependent, charge-off and ALLL related to recovery of amounts previously charged-off are evaluated through an analysis of the fair value of the collateral less costs to sell.

Qualitative Component

While our reserve methodologies strive to reflect all relevant credit risk factors, there continues to be uncertainty associated with, but not limited to, potential imprecision in the estimation process due to the inherent time lag of obtaining information and normal variations between expected and actual outcomes. We may hold additional reserves that are designed to provide coverage for losses attributable to such risks. The ACL also takes into account factors that may not be directly measured in the determination of individually assessed or pooled reserves. Such qualitative factors may include, but are not limited to:

- Industry concentrations and conditions,
- Changes in market conditions, including regulatory and legal requirements,
- Changes in the nature and volume of our portfolio,
- Recent credit quality trends,
- Recent loss experience in particular portfolios, including specific and unique events,
- Recent macroeconomic factors that may not be reflected in the forecast information,
- Limitations of available input data, including historical loss information and recent data such as collateral values,
- Model imprecision and limitations,
- Changes in lending policies and procedures, including changes in loss recognition and mitigation policies and procedures,
- Timing of available information.

See Note 4 Loans and Related Allowance for Credit Losses for additional information about our loan portfolio and the related allowance.

Accrued Interest
When accrued interest is reversed or charged-off in a timely manner, the CECL standard provides a practical expedient to exclude accrued interest from ACL measurement. We consider our nonaccrual and charge-off policies to be timely for all of our investment securities, loans and leases, with the exception of consumer credit cards, education loans and certain unsecured consumer lines of credit. We consider the length of time before nonaccrual/charge-off and the use of appropriate other triggering events for nonaccrual and charge-offs in making this determination. Pursuant to these policy elections, we calculate reserves for accrued interest on credit cards, education loans and certain unsecured consumer lines of credit, which are then included within the ALLL. See the Debt Securities and Nonperforming Loans and Leases sections of this Note 1 for additional information on our nonaccrual and charge-off policies.

Additionally, pursuant to our use of a discounted cash flow methodology in estimating credit losses for our home equity and residential real estate loan classes, applicable reserves for accrued interest are also included within the ALLL for these loan classes.

Purchased Credit Deteriorated Loans or Securities
The allowance for PCD loans or securities is determined at the time of acquisition (including January 1, 2020 when certain purchased impaired loans were exempted and transitioned to PCD upon adoption of CECL), as the estimated expected credit loss of the outstanding balance or par value, based on the methodologies described previously for loans and securities. In accordance with CECL, the allowance recognized at acquisition is added to the acquisition date purchase price to determine the asset's amortized cost basis.

Allowance for Unfunded Lending Related Commitments
We maintain the allowance for unfunded lending related commitments on off-balance sheet credit exposures that are not unconditionally cancelable (*e.g.*, unfunded loan commitments, letters of credit and certain financial guarantees), at a level we believe is appropriate as of the balance sheet date to absorb expected credit losses on these exposures. Other than the estimation of the probability of funding, this reserve is estimated in a manner similar to the methodology used for determining reserves for loans and leases. See the Allowance for Loan and Lease Losses section of this Note 1 for the key credit risk characteristics for unfunded lending related commitments. The allowance for unfunded lending related commitments is recorded as a liability on the Consolidated Balance Sheet. Net adjustments to this reserve are included in the provision for credit losses.

See Note 4 Loans and Related Allowance for Credit Losses for additional information about this allowance.

Allowance for Other Financial Assets
We determine the allowance for other financial assets (*e.g.*, trade receivables, servicing advances on PNC-owned loans, balances with banks) considering historical loss information and other available indicators. In certain cases where there are no historical, current or forecast indicators of an expected credit loss, we may estimate the reserve to be close to zero. As of December 31, 2022, the allowance for other financial assets was immaterial.

Loans Held for Sale

We designate loans as held for sale when we have the intent and ability to sell them. At the time of designation to held for sale, any ACL is reversed, and a valuation allowance for the shortfall between the amortized cost basis and the net realizable value is recognized, excluding the amounts already charged off. Similarly, when loans are no longer considered held for sale, the valuation allowance (net of writedowns) is reversed, and an allowance for credit losses is established, excluding the amounts already charged-off. Write-downs on these loans (if required) are recorded as charge-offs through the valuation allowance. Adjustments to the valuation allowance on held for sale loans are recognized in Other noninterest income.

We have elected to account for certain commercial and residential mortgage loans held for sale at fair value. The changes in the fair value of commercial and residential mortgage loans are measured and recorded within Residential and Commercial mortgage within Noninterest Income each period. See Note 15 Fair Value for additional information.

Interest income with respect to loans held for sale is accrued based on the principal amount outstanding and the loan's contractual interest rate.

In certain circumstances, loans designated as held for sale may be transferred to held for investment based on a change in strategy. We transfer these loans at the lower of cost or estimated fair value; however, any loans originated or purchased for the held for sale portfolio and for which the fair value option has been elected remain at fair value for the life of the loan.

Loan Sales, Loan Securitizations and Retained Interests

We recognize the sale of loans or other financial assets when the transferred assets are legally isolated from our creditors and the appropriate accounting criteria are met. We have sold mortgage and other loans through securitization transactions. In a securitization, financial assets are transferred into trusts or to SPEs in transactions to effectively legally isolate the assets from us.

In a securitization, the trust or SPE issues beneficial interests in the form of senior and subordinated securities backed or collateralized by the assets sold to the trust. The senior classes of the asset-backed securities typically receive investment grade credit ratings at the time of issuance. These ratings are generally achieved through the creation of lower-rated subordinated classes of asset-backed securities, as well as subordinated or residual interests. In certain cases, we may retain a portion or all of the securities issued, interest-only strips, one or more subordinated tranches, servicing rights and, in some cases, cash reserve accounts. Securitized loans are removed from the balance sheet and a net gain or loss is recognized in Noninterest income at the time of initial sale. Gains or losses recognized on the sale of the loans depend on the fair value of the loans sold and the retained interests at the date of sale. We generally estimate the fair value of the retained interests based on the present value of future expected cash flows using assumptions as to discount rates, interest rates, prepayment speeds, credit losses and servicing costs, if applicable.

With the exception of loan sales to certain U.S. government-chartered entities, our loan sales and securitizations are generally structured without recourse to us except for representations and warranties and with no restrictions on the retained interests. We originate, sell and service commercial mortgage loans under the FNMA DUS program. Under the provisions of the DUS program, we participate in a loss-sharing arrangement with FNMA. When we are obligated for loss-sharing or recourse, our policy is to record such liabilities initially at fair value and subsequently reserve for estimated losses in accordance with guidance contained in applicable GAAP.

Variable Interest Entities

A VIE is a corporation, partnership, limited liability company, or any other legal structure used to conduct activities or hold assets generally that either:

- Does not have equity investors with voting rights that can directly or indirectly make decisions about the entity's most significant economic activities through those voting rights or similar rights, or
- Has equity investors that do not provide sufficient equity for the entity to finance its activities without additional subordinated financial support.

A VIE often holds financial assets, including loans or receivables, real estate or other property.

VIEs are assessed for consolidation under ASC 810 – *Consolidation* when we hold a variable interest in these entities. We consolidate a VIE if we are its primary beneficiary. The primary beneficiary of a VIE is determined to be the party that meets both of the following criteria: (i) has the power to make decisions that most significantly affect the economic performance of the VIE; and (ii) has the obligation to absorb losses or the right to receive benefits that in either case could potentially be significant to the VIE. Upon consolidation of a VIE, we recognize all of the VIE's assets, liabilities and noncontrolling interests on our Consolidated Balance Sheet. On a quarterly basis, we determine whether any changes occurred requiring a reassessment of whether we are the primary beneficiary of an entity.

See Note 5 Loan Sale and Servicing Activities and Variable Interest Entities for information about VIEs that we consolidate as well as those that we do not consolidate but in which we hold a significant variable interest.

Mortgage Servicing Rights

We provide servicing under various loan servicing contracts for commercial and residential loans. These contracts are either purchased in the open market or retained as part of a loan securitization or loan sale. All acquired or originated servicing rights are measured at fair value. Fair value is based on the present value of the expected future net cash flows, including assumptions as to:

- Deposit balances and interest rates for escrow and commercial reserve earnings,
- Discount rates,
- Estimated prepayment speeds, and
- Estimated servicing costs.

We measure commercial and residential MSRs at fair value in order to reduce any potential measurement mismatch between our economic hedges and the MSRs. We manage the risk by hedging the fair value of MSRs with derivatives and securities which are expected to increase in value when the value of the servicing right declines. Changes in the fair value of MSRs are recognized as gains/(losses). The fair value of these servicing rights is estimated by using a discounted cash flow valuation model which calculates the present value of estimated future net servicing cash flows, taking into consideration actual and expected mortgage loan prepayment rates, discount rates, servicing costs and other factors which are determined based on current market conditions. See Note 6 Goodwill and Mortgage Servicing Rights for additional information.

Goodwill

Goodwill arising from business acquisitions represents the value attributable to unidentifiable intangible elements in the business acquired. At least annually, in the fourth quarter, or more frequently if events occur or circumstances have changed significantly from the annual test date, management performs the goodwill impairment test at a reporting unit level.

PNC may first perform a qualitative analysis to evaluate whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount. If, after considering all relevant events and circumstances, PNC determines it is not more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, then performing a quantitative impairment test is not necessary. If PNC elects to bypass the qualitative analysis, or concludes via qualitative analysis that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, a quantitative goodwill impairment test is performed. Inputs are generated and used in calculating the fair value of the reporting unit, which is compared to its carrying amount. The fair value of our reporting units is determined by using discounted cash flows and/or market comparability methodologies. If the fair value is greater than the carrying amount, then the reporting unit's goodwill is deemed not to be impaired. If the fair value is less than the carrying amount, an entity should recognize an impairment charge for the amount by which the carrying amount of goodwill exceeds the reporting unit's fair value. The loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. See Note 6 Goodwill and Mortgage Servicing Rights for additional information.

Leases

Lessor Arrangements
We provide financing for various types of equipment, including aircraft, energy and power systems and vehicles through a variety of lease arrangements. Finance leases are carried at the aggregate of lease payments plus estimated residual value of the leased equipment, less unearned income. Leveraged leases, a form of financing leases, are carried net of nonrecourse debt. We recognize income over the term of the lease using the constant effective yield method. Lease residual values are reviewed for impairment at least annually. Gains or losses on the sale of leased assets are included in Other noninterest income. Valuation adjustments on operating lease residuals are included in Other noninterest expense while valuation adjustments on the net investment of a direct financing or sales-type lease are included in Provision for credit losses.

Lessee Arrangements
We lease retail branches, datacenters, office space, land and equipment under operating and finance leases. Under ASC 842, we elected the practical expedient to account for the lease and nonlease components of real estate leases and leases of advertising assets, such as signage, as a single lease component. For other leased asset classes, lease and nonlease components of new lease agreements are accounted for separately. In addition, we elected the practical expedient to not apply the recognition requirements under the standard to short-term leases. Leases with an initial term of 12 months or less are not recorded on the balance sheet, as we recognize lease expense for these leases on a straight-line basis over the lease term. Generally, we have elected to use the Overnight Indexed Swap rate corresponding to the term of the lease at the lease measurement date as our incremental borrowing rate to measure the right-of-use-asset and lease liability.

See Note 7 Leases for additional information on our leasing arrangements.

Depreciation and Amortization

For financial reporting purposes, we depreciate premises and equipment, net of salvage value, principally using the straight-line method over their estimated useful lives.

We use estimated useful lives for furniture and equipment ranging from one to 10 years, and depreciate buildings over an estimated useful life of up to 40 years. We amortize leasehold improvements over their estimated useful lives of up to 15 years or the respective lease terms, whichever is shorter.

We purchase, as well as internally develop and customize, certain software to enhance or perform internal business functions. Software development costs incurred in the planning and post-development project stages are charged to Noninterest expense. Costs associated with designing software configuration and interfaces, installation, coding programs and testing systems are capitalized and amortized using the straight-line method over periods ranging from one to 10 years.

We review the remaining useful lives and carrying values of premises and equipment to determine whether an event has occurred that would indicate a change in useful life is warranted or if any impairment exists.

Other Comprehensive Income

Other comprehensive income, on an after-tax basis, primarily consists of unrealized gains or losses on available for sale debt securities, unrealized gains or losses on derivatives designated as cash flow hedges, and changes in plan assets and benefit obligations of pension and other postretirement benefit plans. Details of each component are included in Note 13 Other Comprehensive Income.

Treasury Stock

We record common stock purchased for treasury at cost. At the date of subsequent reissue, the treasury stock account is reduced by the cost of such stock on the first-in, first-out basis.

Earnings Per Common Share

Basic earnings per common share is calculated using the two-class method to determine income attributable to common shareholders. Unvested share-based payment awards that contain nonforfeitable rights to dividends or dividend equivalents are considered participating securities under the two-class method. Distributed dividends and dividend equivalents related to participating securities and an allocation of undistributed net income to participating securities reduce the amount of income attributable to common shareholders. In a period with a loss, no allocation will be made to the participating securities, as they do not have a contractual obligation to absorb losses. Income attributable to common shareholders is then divided by the weighted-average common shares outstanding for the period.

Diluted earnings per common share is calculated under the more dilutive of either the treasury method or the two-class method. For the diluted calculation, we increase the weighted-average number of shares of common stock outstanding by the assumed conversion of outstanding convertible preferred stock from the beginning of the year or date of issuance, if later, and the number of shares of common stock that would be issued assuming the exercise of stock options and warrants and the issuance of incentive shares using the treasury stock method. These adjustments to the weighted-average number of shares of common stock outstanding are made only when such adjustments will dilute earnings per common share. For periods in which there is a loss from continuing operations, any potential dilutive shares will be anti-dilutive. In this scenario, no potential dilutive shares will be included in the continuing operations, discontinued operations or total earnings per common share calculations, even if overall net income is reported. See Note 14 Earnings Per Share for additional information.

Fair Value of Financial Instruments

The fair value of financial instruments and the methods and assumptions used in estimating fair value amounts and financial assets and liabilities for which fair value was elected are detailed in Note 15 Fair Value.

Derivative Instruments and Hedging Activities

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 asset and liability management process and through credit policies and procedures.

We recognize all derivative instruments at fair value as either Other assets or Other liabilities on the Consolidated Balance Sheet and the related cash flows in the Operating Activities section of the Consolidated Statement of Cash Flows. Adjustments for counterparty credit risk are included in the determination of fair value. The accounting for changes in the fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a cash flow or net investment hedging relationship. For all other derivatives, changes in fair value are recognized in earnings.

We utilize a net presentation for derivative instruments on the Consolidated Balance Sheet taking into consideration the effects of legally enforceable master netting agreements. Cash collateral exchanged with counterparties is also netted against the applicable derivative exposures by offsetting obligations to return, or general rights to reclaim, cash collateral against the fair values of the net derivatives being collateralized.

For those derivative instruments that are designated and qualify as accounting hedges, we designate the hedging instrument, based on the exposure being hedged, as a fair value hedge, a cash flow hedge or a hedge of the net investment in a foreign operation.

We formally document the relationship between the hedging instruments and hedged items, as well as the risk management objective and strategy, before undertaking an accounting hedge. To qualify for hedge accounting, the derivatives and related hedged items must be designated as a hedge at inception of the hedge relationship. In addition, a derivative must be highly effective at reducing the risk associated with the exposure being hedged. For accounting hedge relationships, we formally assess, both at the inception of the hedge and on an ongoing basis, if the derivatives are highly effective in offsetting designated changes in the fair value or cash flows of the hedged item. If it is determined that the derivative instrument is not highly effective, hedge accounting is discontinued. We assess effectiveness using statistical regression analysis. Where the critical terms of the derivative and hedged item match, effectiveness may be assessed qualitatively.

For derivatives that are designated as fair value hedges (*i.e*., hedging the exposure to changes in the fair value of an asset or a liability attributable to a particular risk, such as changes in benchmark interest rates), changes in the fair value of the hedging instrument are recognized in earnings and offset by also recognizing in earnings the changes in the fair value of the hedged item attributable to the hedged risk. To the extent the change in fair value of the derivative does not offset the change in fair value of the hedged item, the difference is reflected in the Consolidated Income Statement in the same income statement line as the hedged item.

For derivatives designated as cash flow hedges (*i.e*., hedging the exposure to variability in expected future cash flows), the gain or loss on derivatives is reported as a component of AOCI and subsequently reclassified to income in the same period or periods during which the hedged cash flows affect earnings and recorded in the same income statement line item as the hedged cash flows. For derivatives designated as a hedge of net investment in a foreign operation, the gain or loss on the derivatives is reported as a component of AOCI.

We discontinue hedge accounting when it is determined that the derivative no longer qualifies as an effective hedge; the derivative expires or is sold, terminated or exercised; or the derivative is de-designated as a fair value or cash flow hedge or, for a cash flow hedge, it is no longer probable that the forecasted transaction will occur by the end of the originally specified time period.

We purchase or originate financial instruments that contain an embedded derivative. For financial instruments not measured at fair value with changes in fair value reported in earnings, we assess, at inception of the transaction, if the economic characteristics of the embedded derivative are clearly and closely related to the economic characteristics of the host contract, and whether a separate instrument with the same terms as the embedded derivative would be a derivative. If the embedded derivative is not clearly and closely related to the host contract and meets the definition of a derivative, the embedded derivative is recorded separately from the host contract with changes in fair value recorded in earnings, unless we elect to account for the hybrid instrument at fair value.

We enter into commitments to originate residential and commercial mortgage loans for sale. We also enter into commitments to purchase or sell commercial and residential real estate loans. These commitments are accounted for as free-standing derivatives which are recorded at fair value in Other assets or Other liabilities on the Consolidated Balance Sheet. Any gain or loss from the change in fair value after the inception of the commitment is recognized in Noninterest income.

See Note 16 Financial Derivatives for additional information.

Income Taxes

We account for income taxes under the asset and liability method. Deferred tax assets and liabilities are determined based on differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that we expect will apply at the time when we believe the differences will reverse. Changes in tax rates and tax law are accounted for in the period of enactment. Thus, at the enactment date, deferred taxes are remeasured and the change is recognized in Income Tax expense. The recognition of deferred tax assets requires an assessment to determine the realization of such assets. Realization refers to the incremental benefit achieved through the reduction in future taxes payable or refunds receivable from the deferred tax assets, assuming that the underlying deductible differences and carryforwards are the last items to enter into the determination of future taxable income. We establish a valuation allowance for tax assets when it is more likely than not that they will not be realized, based upon all available positive and negative evidence.

We use the proportional amortization method for LIHTC investments, whereby the associated investment tax credits are recognized as a reduction to tax expense. We use the deferral method of accounting for all other tax credit investments. Under this method, the investment tax credits are recognized as a reduction to the related asset.

See Note 19 Income Taxes for additional information.

Revenue Recognition

We earn interest and noninterest income from various sources, including:

- Lending,
- Securities portfolio,
- Asset management,
- Loan sales, loan securitizations, and servicing,
- Brokerage services,
- Sale of loans and securities,
- Certain private equity activities, and
- Securities, derivatives and foreign exchange activities.

In addition, we earn fees and commissions from:

- Issuing loan commitments, standby letters of credit and financial guarantees,
- Deposit account services,
- Merchant services,
- Selling various insurance products,
- Providing treasury management services including money transfer services,
- Providing merger and acquisition advisory and related services,
- Debit and credit card transactions, and
- Facilitating and participating in certain capital markets transactions.

Service charges on deposit accounts are recognized when earned. Brokerage fees and gains and losses on the sale of securities and certain derivatives are recognized on a trade-date basis.

We record private equity income or loss based on changes in the valuation of the underlying investments or when we dispose of our interest.

We recognize gain/(loss) on changes in the fair value of certain financial instruments where we have elected the fair value option. These financial instruments include certain commercial and residential mortgage loans originated for sale, certain residential mortgage portfolio loans and resale agreements. We also recognize gain/(loss) on changes in the fair value of residential and commercial MSRs.

We recognize revenue from servicing residential and commercial mortgages for others as earned based on the specific contractual terms. These revenues are reported on the Consolidated Income Statement in the line item Residential and commercial mortgage. We recognize revenue from securities, derivatives and foreign exchange customer-related trading, as well as securities underwriting activities, as these transactions occur or as services are provided. We generally recognize gains from the sale of loans upon meeting the derecognition criteria for transfers of financial assets. Mortgage revenue recognized is reported net of mortgage repurchase reserves.

For the fee-based revenue within the scope of ASC 606 - *Revenue from Contracts with Customers*, revenue is recognized when or as those services are transferred to the customer. See Note 24 Fee-Based Revenue from Contracts with Customers for additional information related to revenue within the scope of ASC 606.

Discontinued Operations

A disposal of an asset or business that meets the criteria for held for sale classification is reported as discontinued operations when the disposal represents a strategic shift that has had, or will have a major effect on our operating results. We report an asset as held for sale when management has approved or received approval to sell the asset and is committed to a formal plan, the asset is available for immediate sale, the asset is being actively marketed, the sale is anticipated to occur during the ensuing year and certain other specified criteria are met. An asset classified as held for sale is recorded at the lower of its carrying amount or estimated fair value less cost to sell. If the carrying amount of the asset exceeds its estimated fair value, the asset is written down to its fair value upon the held for sale designation.

When presenting discontinued operations, assets classified as held for sale are segregated in the Consolidated Balance Sheet commencing in the period in which the asset meets all of the held for sale criteria described above and prior periods are recast. The results of discontinued operations are reported in discontinued operations in the Consolidated Income Statement for current and prior periods commencing in the period in which the asset or business is either disposed of or is classified as held for sale, including any gain or loss recognized on the sale or adjustment of the carrying amount to fair value less cost to sell.

Recently Adopted Accounting Standards

Accounting Standards Update	Description	Financial Statement Impact
Reference Rate Reform - ASU 2020-04 Issued March 2020 **Reference Rate Reform Scope - ASU 2021-01** Issued January 2021 **Reference Rate Reform Deferral of Sunset Date – ASU 2022-06** Issued December 2022	• Provides optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform (codified in ASC 848). • Includes optional expedients related to contract modifications that allow an entity to account for modifications (if certain criteria are met) as if the modifications were only minor (assets within the scope of ASC 310, *Receivables*), were not substantial (assets within the scope of ASC 470, *Debt*) and/or did not result in remeasurements or reclassifications (assets within the scope of ASC 842, *Leases*, and other Topics) of the existing contract. • Includes optional expedients related to hedging relationships within the scope of ASC 815, *Derivatives & Hedging*, whereby changes to the critical terms of a hedging relationship do not require dedesignation if certain criteria are met. In addition, potential sources of ineffectiveness as a result of reference rate reform may be disregarded when performing some effectiveness assessments. • Includes optional expedients and exceptions for contract modifications and hedge accounting that apply to derivative instruments impacted by the market-wide discounting transition. • Guidance in these ASUs are effective as of March 12, 2020 through December 31, 2024.	• ASU 2020-04 was adopted March 12, 2020. ASU 2021-01 was retrospectively adopted October 1, 2020. ASU 2022-06 was adopted upon issuance. • During the fourth quarter of 2020, we elected to apply certain optional expedients for contract modifications and hedging relationships to derivative instruments impacted by the market-wide discounting transition. These optional expedients remove the requirement to remeasure contract modifications or dedesignate hedging relationships due to reference rate reform. The elections made in the fourth quarter of 2020 apply only to derivative instruments impacted by the market-wide discounting transition, not all derivative instruments. • During the first quarter of 2021, we elected to apply certain optional expedients to derivative instruments that were modified in the first quarter due to the adoption of fallback language recommended by the ISDA to address the anticipated cessation of LIBOR. These optional expedients remove the requirement to remeasure contract modifications or dedesignate hedging relationships due to reference rate reform. • During the fourth quarter of 2021, we elected to apply certain optional expedients for contract modifications to receivables modified in the fourth quarter due to the cessation of 1-week and 2-month USD LIBOR tenors and non-USD Interbank Offered Rates. These optional expedients remove the requirement to assess whether the contract modification was more-than-minor in accordance with ASC 310. We also elected to apply certain optional expedients related to assessing hedge effectiveness to our cash flow hedge relationships affected by reference rate reform. • We did not make any additional elections for 2022. We expect to continue to elect various optional expedients for contract modifications and hedge relationships affected by reference rate reform through the effective date of this guidance.

Accounting Standards Update	Description	Financial Statement Impact
Portfolio Layer Hedging - ASU 2022-01 Issued March 2022	• Required effective date of January 1, 2023; early adoption is permitted. • Permits entities to expand their use of the portfolio layer method (previously the last-of-layer method) for fair value hedges of interest rate risk. • Expands the scope to allow nonprepayable financial assets to be included in a closed portfolio hedge using the portfolio layer method. • Allows multiple hedged layers to be designated for a single closed portfolio of financial assets or one or more beneficial interests secured by a portfolio of financial instruments. • Provides additional guidance on accounting for fair value hedge basis adjustments associated with portfolio layer hedges, generally requiring these adjustments to be maintained at the closed portfolio level and clarifying how these amounts should be disclosed. • Requires a prospective transition approach for designation of multiple hedged layers of a single closed portfolio, a modified retrospective transition approach for hedge basis adjustments under the portfolio layer method, and the option of a prospective or retrospective transition approach for disclosures. • Allows for an election to transfer debt securities classified as held to maturity to available for sale if the portfolio layer hedging method is applied to those securities; the election must be made within 30 days of adoption.	**Subsequent event** • We adopted ASU 2022-01 on January 1, 2023. The adoption of this guidance had no impact on our consolidated results of operations or our consolidated financial position, as we had no existing hedge relationships impacted by the ASU as of the adoption date. The guidance will be applied prospectively to any new portfolio layer method hedging relationships entered into subsequent to January 1, 2023.

Accounting Standards Update	Description	Financial Statement Impact
Troubled Debt Restructurings and Vintage Disclosures - ASU 2022-02 Issued March 2022	• Required effective date of January 1, 2023; early adoption is permitted. • Eliminates the accounting guidance for TDRs and requires an entity to apply the loan refinancing and restructuring guidance to determine whether a modification results in a new loan or a continuation of an existing loan. • Eliminates the requirement to use a discounted cash flow approach to measure the allowance for credit losses for TDRs. • Enhances disclosure requirements for certain loan refinancings and restructurings by creditors when a borrower is experiencing financial difficulty. • Requires disclosure of current-period gross charge-offs by year of origination for financing receivables and net investments in leases within the scope of CECL. • Requires a prospective transition approach to all amendments except those related to the recognition and measurement of TDRs (which allow a modified retrospective transition approach through a cumulative-effect adjustment to retained earnings in the period of adoption).	**Subsequent event** • We adopted ASU 2022-02 on January 1, 2023 using a modified retrospective transition approach for the amendments related to the recognition and measurement of TDRs. • This standard will not materially impact our consolidated results of operations or our consolidated financial position. The amendments require changes to disclosures on information related to loan modifications to borrowers experiencing financial difficulty and current-period gross charge-offs.

NOTE 2 ACQUISITION AND DIVESTITURE ACTIVITY

Acquisition of BBVA USA Bancshares, Inc.

On June 1, 2021, PNC acquired BBVA including its U.S. banking subsidiary, BBVA USA, for $11.5 billion in cash. PNC did not acquire the following entities as part of the acquisition: BBVA Securities, Inc., Propel Venture Partners Fund I, L.P. and BBVA Processing Services, Inc. This transaction has been accounted for as a business combination. Accordingly, the assets and liabilities from BBVA were recorded at fair value as of the acquisition date. The determination of fair value requires management to make estimates about discount rates, future expected cash flows, market conditions and other future events that are highly subjective in nature and subject to change. Fair value estimates related to the assets and liabilities from BBVA were subject to adjustment for up to one year after the closing date of the acquisition as additional information became available. Valuations subject to adjustment included, but were not limited to, loans, certain deposits, certain other assets, customer relationships and the core deposit intangibles.

On October 12, 2021, PNC converted approximately 2.6 million customers, 9,000 employees and over 600 branches across seven states, merging BBVA USA into PNC Bank.

PNC incurred merger and integration costs of $55 million for the twelve months ended December 31, 2022, in connection with the transaction. These costs are recorded as contra-revenue and expense on the Consolidated Income Statement. The integration expenses are primarily related to retail services and realty expenses. Cumulative integration costs, excluding write-offs for capitalized items, were $860 million. Integration costs associated with write-offs for capitalized items were $120 million.

The following table includes the fair value of the identifiable tangible and intangible assets and liabilities from BBVA:

Table 39: Acquisition Consideration

In millions	June 1, 2021 Fair Value
Fair value of acquisition consideration	$ 11,480
Assets	
Cash and due from banks	$ 969
Interest-earning deposits with banks	13,313
Loans held for sale	463
Investment securities – available for sale	18,358
Net loans	61,423
Equity investments	723
Mortgage servicing rights	35
Core deposit intangibles and other intangible assets	378
Other	3,527
Total assets	$ 99,189
Liabilities	
Deposits	$ 85,562
Borrowed funds	2,449
Accrued expenses and other liabilities	1,275
Total liabilities	$ 89,286
Noncontrolling interests	22
Less: Net assets	$ 9,881
Goodwill	$ 1,599

Goodwill of $1.6 billion recorded in connection with the transaction resulted from the reputation, operating model and expertise of BBVA. The amount of goodwill recorded reflected the increased market share and related synergies that resulted from the acquisition, and represents the excess purchase price over the estimated fair value of the net assets from BBVA. The goodwill was allocated to each of our three business segments and is not deductible for income tax purposes. See Note 6 Goodwill and Mortgage Servicing Rights for additional information on the allocation of goodwill to the segments.

The following table includes the fair value and unpaid principal balance of the loans from the BBVA acquisition:

Table 40: Fair Value and Unpaid Principal Balance of Loans from the BBVA Acquisition

	June 1, 2021	
In millions	Unpaid Principal Balance	Fair Value
Loans		
Commercial		
Commercial and industrial	$ 29,864	$ 29,381
Commercial real estate	10,632	10,313
Equipment lease financing	48	48
Total commercial	40,544	39,742
Consumer		
Residential real estate	12,871	12,961
Home equity	2,430	2,423
Automobile	3,916	3,910
Credit card	820	758
Other consumer	1,688	1,629
Total consumer	21,725	21,681
Total	$ 62,269	$ 61,423

Other intangible assets from the BBVA acquisition as of June 1, 2021 consisted of the following:

Table 41: Intangible Assets

In millions	Fair Value	Weighted Life (years)	Amortization Method
Residential mortgage servicing rights	$ 35	5.5	(a)
Core deposits	$ 262	10.0	Accelerated
Other	116	9.8	Straight-line
Total core deposits and other	$ 378		

(a) Intangible asset accounted for at fair value.

The following is a description of the methods used to determine the fair values of significant assets and liabilities.

Cash and Due from Banks and Interest-earning Deposits with Banks

The carrying amount of these assets is a reasonable estimate of fair value based on the short-term nature of these assets.

Loans Held for Sale

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 similar loans.

Personal installment loans are pooled based on delinquency status, and fair value of individual loans is calculated based on traded consumer unsecured loans, dealer research and loan level performance characteristics.

Available For Sale Securities

All investment securities from the BBVA acquisition were classified within the available for sale portfolio at acquisition. Fair value estimates for available for sale securities were determined by third-party pricing 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. These methods include the use of quoted prices for the identical or a similar security, an alternative market-based approach or an income approach, such as a discounted cash flow pricing model.

Loans

Fair value for loans were based on a discounted cash flow methodology that considered credit loss and prepayment expectations, market interest rates and other market factors, such as liquidity, from the perspective of a market participant. Loan cash flows were generated on an individual loan basis. The PD, LGD, exposure at default and prepayment assumptions are the key factors driving credit losses which are embedded into the estimated cash flows.

Equity Investments
Equity investments primarily include LIHTC investments and preservation fund investments. The fair value of the LIHTC investments was estimated based on LIHTC pricing observed for recent transactions in markets where the properties underlying the LIHTC investments from the BBVA acquisition are located. The fair value of the preservation investments was estimated based on appraisals and valuations of the properties in the investment portfolio using income and market projections.

Mortgage Servicing Rights
The fair value of mortgage servicing rights from the BBVA acquisition is estimated by using a discounted cash flow valuation model which calculates the present value of estimated future net servicing cash flows, taking into consideration actual and expected mortgage loan prepayment rates, discount rates, servicing costs and other factors which are determined based on current market conditions.

Core Deposit Intangible
This intangible asset represents the value of certain client deposit relationships. The fair value was estimated utilizing the cost method. Appropriate consideration was given to deposit costs including servicing costs, client retention and alternative funding source costs at the time of acquisition. The discount rate used was derived taking into account the estimated cost of equity, risk-free return rate and risk premium for the market and specific risk related to the asset's cash flows. The core deposit intangible is being amortized over 10 years using an accelerated amortization methodology.

Deposits
The fair values for time deposits were estimated by discounting contractual cash flows using current market rates for instruments with similar maturities. For deposits with no defined maturity, carrying values approximate fair values.

Borrowed Funds
The fair values of long-term debt instruments were estimated based on quoted market prices.

The following table presents financial results of BBVA from the date of acquisition through September 30, 2021. BBVA information was fully integrated into PNC's processes and systems during system conversion in the fourth quarter of 2021 and as a result standalone BBVA financial results were no longer available.

Table 42: BBVA Financial Results

In millions	Four months ended September 30, 2021
Net interest income	$ 768
Noninterest income	$ 285
Net income	$ 378

The following table presents unaudited pro forma results as if the acquisition of BBVA by PNC had occurred on January 1, 2020 and includes the impact of amortizing and accreting certain estimated purchase accounting adjustments such as intangible assets as well as fair value adjustments to loans, deposits and long-term debt. Merger and integration costs of $798 million that were incurred for the twelve months ended December 31, 2021 are included in the pro forma results. PNC's financial results include the $4.3 billion divestiture of BlackRock recorded in net income for the year ended December 31, 2020. Additionally, BBVA's financial results through the twelve months ended December 31, 2020 included a $2.2 billion goodwill impairment charge recorded in noninterest expense. The pro forma information does not necessarily reflect the results that would have occurred had PNC acquired BBVA on January 1, 2020.

Table 43: Unaudited Pro Forma Results

	Year ended December 31	
In millions	2021	2020
Net interest income	$ 11,662	$ 12,413
Noninterest income	$ 8,960	$ 7,866
Net income	$ 7,475	$ 4,928

Under CECL, PNC is required to determine whether purchased loans held for investment have experienced more-than-insignificant deterioration in credit quality since origination. PNC considers a variety of factors in connection with the identification of more-than-insignificant deterioration in credit quality, including but not limited to nonperforming status, delinquency, risk ratings, TDR classification, FICO scores and other qualitative factors that indicate deterioration in credit quality since origination. PNC initially measures the amortized cost of a PCD loan by adding the acquisition date estimate of expected credit losses to the loan's purchase price. The initial ACL for PCD loans of $1.1 billion was established through an adjustment to the BBVA loan balance and related purchase accounting mark. Non-PCD loans and PCD loans had a fair value of $52.1 billion and $9.4 billion at the acquisition date and unpaid principal balance of $52.0 billion and $10.3 billion, respectively. In accordance with U.S. GAAP, there was no carryover of the ACL that had been previously recorded by BBVA. Subsequent to acquisition, PNC recorded an ACL on non-PCD loans of $1.0 billion through an increase to the provision for credit losses.

Table 44: PCD Loan Activity

In millions	June 1, 2021
Principal balance	$ 10,253
ACL at acquisition	(1,102)
Non-credit premium	219
Purchase price	$ 9,370

<u>Sale of Equity Investment in Blackrock, Inc.</u>

In May 2020, PNC completed the sale of its 31.6 million shares of BlackRock, Inc., common and preferred stock through a registered secondary offering at a price of $420 per share. In addition, BlackRock repurchased 2.65 million shares from PNC at a price of $414.96 per share. The total proceeds from the sale were $14.2 billion in cash, net of $0.2 billion in expenses, and resulted in a gain on sale of $4.3 billion. Additionally, PNC contributed 500,000 BlackRock shares to the PNC Foundation.

Following the sale and donation, PNC has divested its entire investment in BlackRock and only holds shares of BlackRock stock in a fiduciary capacity for clients of PNC.

The following table summarizes the results from the discontinued operations of BlackRock included in the Consolidated Income Statement:

Table 45: Consolidated Income Statement - Discontinued Operations

	Year ended December 31
In millions	2020
Noninterest income	$ 5,777
Total revenue	5,777
Income from discontinued operations before income taxes	5,777
Income taxes	1,222
Net income from discontinued operations	$ 4,555

The following table summarizes the cash flows of discontinued operations of BlackRock included in the Consolidated Statement of Cash Flows:

Table 46: Consolidated Statement of Cash Flows - Discontinued Operations

	Year ended December 31
In millions	2020
Cash flows from discontinued operations	
Net cash provided (used) by operating activities of discontinued operations	$ (2,683)
Net cash provided by investing activities of discontinued operations	$ 14,225

NOTE 3 INVESTMENT SECURITIES

The following table summarizes our available for sale and held to maturity portfolios by major security type:

Table 47: Investment Securities Summary (a)(b)

	December 31, 2022				December 31, 2021			
		Unrealized				Unrealized		
In millions	Amortized Cost (c)	Gains	Losses	Fair Value	Amortized Cost (c)	Gains	Losses	Fair Value
Securities Available for Sale								
U.S. Treasury and government agencies	$ 9,196	$ 10	$ (836)	$ 8,370	$ 46,210	$ 324	$ (370)	$ 46,164
Residential mortgage-backed								
Agency	32,114	13	(3,304)	28,823	67,326	695	(389)	67,632
Non-agency	697	131	(9)	819	927	231		1,158
Commercial mortgage-backed								
Agency	1,845		(170)	1,675	1,740	39	(6)	1,773
Non-agency	1,325		(69)	1,256	3,423	31	(18)	3,436
Asset-backed	103	27	(1)	129	6,380	60	(31)	6,409
Other	3,288	44	(245)	3,087	4,792	186	(14)	4,964
Total securities available for sale	$ 48,568	$ 225	$ (4,634)	$ 44,159	$130,798	$ 1,566	$ (828)	$131,536
Securities Held to Maturity								
U.S. Treasury and government agencies	$ 36,571	$ 6	$ (1,617)	$ 34,960	$ 814	$ 76		$ 890
Residential mortgage-backed								
Agency	45,271	74	(3,095)	42,250				
Non-agency	276		(21)	255				
Commercial mortgage-backed								
Agency	848	4	(26)	826				
Non-agency	1,667		(40)	1,627				
Asset-backed	7,188	6	(140)	7,054				
Other	3,354	25	(72)	3,307	612	27	$ (7)	632
Total securities held to maturity (d)	$ 95,175	$ 115	$ (5,011)	$ 90,279	$ 1,426	$ 103	$ (7)	$ 1,522

(a) At December 31, 2022, the accrued interest associated with our held to maturity and available for sale portfolios totaled $282 million and $144 million, respectively. The comparable amounts at December 31, 2021 were $5 million and $322 million, respectively. These amounts are included in Other assets on the Consolidated Balance Sheet.
(b) Credit ratings represent a primary credit quality indicator used to monitor and manage credit risk. Of our total securities portfolio, 97% and 96% were rated AAA/AA as of December 31, 2022 and 2021, respectively.
(c) Amortized cost is presented net of allowance of $142 million and is primarily related to non-agency commercial mortgage-backed securities for securities available for sale and $7 million for securities held to maturity at December 31, 2022. The comparable amounts at December 31, 2021 were $130 million and $3 million, respectively.
(d) Held to maturity securities transferred from available for sale are included in held to maturity at fair value at the time of the transfer. The amortized cost of held to maturity securities included net unrealized losses of $5.1 billion, at December 31, 2022, related to securities transferred, which are offset in AOCI, net of tax.

The fair value of investment securities is impacted by interest rates, credit spreads, market volatility and liquidity conditions. Securities available for sale are carried at fair value with net unrealized gains and losses included in Total shareholders' equity as AOCI, unless credit related. Net unrealized gains and losses are determined by taking the difference between the fair value of a security and its amortized cost, net of any allowance. Securities held to maturity are carried at amortized cost less any allowance. Investment securities at December 31, 2022 included $0.2 billion of net unsettled purchases which represent non-cash investing activity, and accordingly, are not reflected on the Consolidated Statement of Cash Flows. The comparable amount for December 31, 2021 was $0.8 billion.

During 2022, we transferred securities with a fair value of $82.7 billion from available for sale to held to maturity. The securities transferred included $34.0 billion of U.S. Treasury and government agency securities, $39.0 billion of agency residential mortgage-backed securities, $6.3 billion of asset-backed securities and $3.4 billion of various other security types. The securities were reclassified at fair value at the time of the transfer and the transfers represented non-cash transactions. AOCI at December 31, 2022 included pretax unrealized losses of $5.1 billion related to the transfers. These unrealized losses will be amortized, consistent with the amortization of the discount on these securities, over the remaining life as an adjustment of yield, resulting in no impact to net interest income or net income.

We maintain the allowance for investment securities at levels that we believe to be appropriate as of the balance sheet date to absorb expected credit losses on our portfolio. As of December 31, 2022, the allowance for investment securities was $149 million and primarily related to non-agency commercial mortgage-backed securities in the available for sale portfolio. The comparable amount at December 31, 2021 was $133 million. See Note 1 Accounting Policies for a discussion of the methodologies used to determine the allowance for investment securities.

At December 31, 2022, AOCI included pretax losses of $314 million from derivatives that hedged the purchase of investment securities classified as held to maturity. The losses will be accreted to interest income as an adjustment of yield on the securities.

Table 48 presents the gross unrealized losses and fair value of securities available for sale that do not have an associated allowance for investment securities at December 31, 2022 and 2021. These securities are segregated between investments that had been in a continuous unrealized loss position for less than twelve months and twelve months or more, based on the point in time that the fair value declined below the amortized cost basis. All securities included in the table have been evaluated to determine if a credit loss exists. As part of that assessment, as of December 31, 2022, we concluded that we do not intend to sell and believe we will not be required to sell these securities prior to recovery of the amortized cost basis.

Table 48: Gross Unrealized Loss and Fair Value of Securities Available for Sale Without an Allowance for Credit Losses

	Unrealized loss position less than 12 months		Unrealized loss position 12 months or more		Total	
In millions	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value
December 31, 2022						
U.S. Treasury and government agencies	$ (601)	$ 5,868	$ (235)	$ 2,208	$ (836)	$ 8,076
Residential mortgage-backed						
Agency	(1,744)	19,036	(1,560)	8,971	(3,304)	28,007
Non-agency	(6)	112	(2)	17	(8)	129
Commercial mortgage-backed						
Agency	(125)	1,283	(45)	372	(170)	1,655
Non-agency	(44)	750	(18)	394	(62)	1,144
Asset-backed			(1)	5	(1)	5
Other	(96)	1,418	(112)	1,144	(208)	2,562
Total securities available for sale	$ (2,616)	$ 28,467	$ (1,973)	$ 13,111	$ (4,589)	$ 41,578
December 31, 2021						
U.S. Treasury and government agencies	$ (370)	$ 32,600			$ (370)	$ 32,600
Residential mortgage-backed						
Agency	(369)	41,521	$ (20)	$ 1,489	(389)	43,010
Commercial mortgage-backed						
Agency	(5)	451	(1)	60	(6)	511
Non-agency	(4)	1,453	(3)	474	(7)	1,927
Asset-backed	(29)	3,465	(2)	188	(31)	3,653
Other	(13)	1,405			(13)	1,405
Total securities available for sale	$ (790)	$ 80,895	$ (26)	$ 2,211	$ (816)	$ 83,106

Information related to gross realized securities gains and losses from the sales of securities is set forth in the following table:

Table 49: Gains (Losses) on Sales of Securities Available for Sale

Year ended December 31 In millions	Gross Gains	Gross Losses	Net Gains (Losses)	Tax Expense (Benefit)
2022	$ 11	$ (18)	$ (7)	$ (1)
2021	$ 360	$ (296)	$ 64	$ 13
2020	$ 307	$ (2)	$ 305	$ 64

The following table presents, by remaining contractual maturity, the amortized cost, fair value and weighted-average yield of debt securities at December 31, 2022:

Table 50: Contractual Maturity of Debt Securities

December 31, 2022 Dollars in millions	1 Year or Less	After 1 Year through 5 Years	After 5 Years through 10 Years	After 10 Years	Total
Securities Available for Sale					
U.S. Treasury and government agencies	$ 2,121	$ 2,958	$ 2,101	$ 2,016	$ 9,196
Residential mortgage-backed					
Agency	2	75	3,304	28,733	32,114
Non-agency			7	690	697
Commercial mortgage-backed					
Agency	66	410	1,075	294	1,845
Non-agency		120	264	941	1,325
Asset-backed			10	93	103
Other	128	2,309	695	156	3,288
Total securities available for sale at amortized cost	$ 2,317	$ 5,872	$ 7,456	$ 32,923	$ 48,568
Fair value	$ 2,296	$ 5,505	$ 6,762	$ 29,596	$ 44,159
Weighted-average yield, GAAP basis (a)	2.39 %	1.81 %	2.27 %	2.87 %	2.63 %
Securities Held to Maturity					
U.S. Treasury and government agencies	$ 862	$ 27,076	$ 7,831	$ 802	$ 36,571
Residential mortgage-backed					
Agency		8	283	44,980	45,271
Non-agency				276	276
Commercial mortgage-backed					
Agency			584	264	848
Non-agency		114		1,553	1,667
Asset-backed	253	2,134	2,117	2,684	7,188
Other	159	1,169	579	1,447	3,354
Total securities held to maturity at amortized cost	$ 1,274	$ 30,501	$ 11,394	$ 52,006	$ 95,175
Fair value	$ 1,264	$ 29,439	$ 10,799	$ 48,777	$ 90,279
Weighted-average yield, GAAP basis (a)	2.31 %	1.35 %	2.41 %	2.86 %	2.31 %

(a) Weighted-average yields are based on amortized cost with effective yields weighted for the contractual maturity of each security. Actual maturities and yields may differ as certain securities may be prepaid.

At December 31, 2022, there were no securities of a single issuer, other than FNMA and FHLMC, that exceeded 10% of total shareholders' equity. The FNMA and FHLMC investments had a total amortized cost of $39.6 billion and $33.0 billion and fair value of $36.4 billion and $30.5 billion, respectively.

The following table presents the fair value of securities that have been either pledged to or accepted from others to collateralize outstanding borrowings:

Table 51: Fair Value of Securities Pledged and Accepted as Collateral

In millions	December 31 2022	December 31 2021
Pledged to others	$ 24,708	$ 27,349
Accepted from others:		
Permitted by contract or custom to sell or repledge	$ 1,266	$ 707
Permitted amount repledged to others	$ 1,266	$ 707

The securities pledged to others include positions held in our portfolio of investment securities, trading securities and securities accepted as collateral from others that we are permitted by contract or custom to sell or repledge, and were used to secure public and trust deposits, repurchase agreements and for other purposes. See Note 16 Financial Derivatives for information related to securities pledged and accepted as collateral for derivatives.

NOTE 4 LOANS AND RELATED ALLOWANCE FOR CREDIT LOSSES

Loan Portfolio

Our loan portfolio consists of two portfolio segments – Commercial and Consumer. Each of these segments comprises multiple loan classes. Classes are characterized by similarities in risk attributes and the manner in which we monitor and assess credit risk.

Commercial	Consumer
• Commercial and industrial • Commercial real estate • Equipment lease financing	• Residential real estate • Home equity • Automobile • Credit card • Education • Other consumer

See Note 1 Accounting Policies for additional information on our loan related policies.

Credit Quality

We closely monitor economic conditions and loan performance trends to manage and evaluate our exposure to credit risk within the loan portfolio based on our defined loan classes. In doing so, we use several credit quality indicators, including trends in delinquency rates, nonperforming status, analysis of PD and LGD ratings, updated credit scores and originated and updated LTV ratios.

The measurement of delinquency status is based on the contractual terms of each loan. Loans that are 30 days or more past due in terms of payment are considered delinquent. Loan delinquencies include government insured or guaranteed loans, loans accounted for under the fair value option and PCD loans.

Table 52 presents the composition and delinquency status of our loan portfolio at December 31, 2022 and 2021. We manage credit risk based on the risk profile of the borrower, repayment sources, underlying collateral and other support given current events, economic conditions and expectations. We refine our practices to meet the changing environment resulting from rising inflation levels, supply chain disruptions, higher rates and secular changes resulting from the COVID-19 pandemic. To mitigate losses and enhance customer support, we have customer assistance, loan modification and collection programs that align with the CARES Act and subsequent interagency guidance. As a result, under the CARES Act credit reporting rules, certain loans modified due to COVID-19 related hardships are not being reported as past due as of December 31, 2022 and 2021 based on the contractual terms of the loan, even where borrowers may not be making payments on their loans during the modification period.

Table 52: Analysis of Loan Portfolio (a) (b)

Dollars in millions	Accruing: Current or Less Than 30 Days Past Due	30-59 Days Past Due	60-89 Days Past Due	90 Days Or More Past Due	Total Past Due (c)	Nonperforming Loans	Fair Value Option Nonaccrual Loans (d)	Total Loans (e) (f)
December 31, 2022								
Commercial								
Commercial and industrial	$ 181,223	$ 169	$ 27	$ 137	$ 333	$ 663		$ 182,219
Commercial real estate	36,104	19	4		23	189		36,316
Equipment lease financing	6,484	20	4		24	6		6,514
Total commercial	223,811	208	35	137	380	858		225,049
Consumer								
Residential real estate	44,306	281	112	199	592 (c)	424	$ 567	45,889
Home equity	25,305	53	20		73	526	79	25,983
Automobile	14,543	106	25	7	138	155		14,836
Credit card	6,906	50	35	70	155	8		7,069
Education	2,058	34	22	59	115 (c)			2,173
Other consumer	4,975	15	12	10	37	14		5,026
Total consumer	98,093	539	226	345	1,110	1,127	646	100,976
Total	$ 321,904	$ 747	$ 261	$ 482	$ 1,490	$ 1,985	$ 646	$ 326,025
Percentage of total loans	98.73 %	0.23 %	0.08 %	0.15 %	0.46 %	0.61 %	0.20 %	100.00 %
December 31, 2021								
Commercial								
Commercial and industrial	$ 151,698	$ 235	$ 72	$ 132	$ 439	$ 796		$ 152,933
Commercial real estate	33,580	46	24	1	71	364		34,015
Equipment lease financing	6,095	25	2		27	8		6,130
Total commercial	191,373	306	98	133	537	1,168		193,078
Consumer								
Residential real estate	37,706	379	119	328	826 (c)	517	$ 663	39,712
Home equity	23,305	53	18		71	596	89	24,061
Automobile	16,252	146	40	14	200	183		16,635
Credit card	6,475	49	33	62	144	7		6,626
Education	2,400	43	25	65	133 (c)			2,533
Other consumer	5,644	35	22	17	74	9		5,727
Total consumer	91,782	705	257	486	1,448	1,312	752	95,294
Total	$ 283,155	$ 1,011	$ 355	$ 619	$ 1,985	$ 2,480	$ 752	$ 288,372
Percentage of total loans	98.19 %	0.35 %	0.12 %	0.21 %	0.69 %	0.86 %	0.26 %	100.00 %

(a) Amounts in table represent loans held for investment and do not include any associated ALLL.
(b) The accrued interest associated with our loan portfolio totaled $1.2 billion and $0.7 billion at December 31, 2022 and 2021, respectively. These amounts are included in Other assets on the Consolidated Balance Sheet.
(c) Past due loan amounts include government insured or guaranteed Residential real estate loans and Education loans totaling $0.3 billion and $0.1 billion at December 31, 2022. Comparable amounts at December 31, 2021 were $0.4 billion and $0.1 billion, respectively.
(d) Consumer loans accounted for under the fair value option for which we do not expect to collect substantially all principal and interest are subject to nonaccrual accounting and classification upon meeting any of our nonaccrual policy criteria. Given that these loans are not accounted for at amortized cost, these loans have been excluded from the nonperforming loan population.
(e) Includes unearned income, unamortized deferred fees and costs on originated loans and premiums or discounts on purchased loans totaling $0.9 billion and $0.7 billion at December 31, 2022 and 2021, respectively.
(f) Collateral dependent loans totaled $1.3 billion and $1.7 billion at December 31, 2022 and 2021, respectively.

In the normal course of business, we originate or purchase loan products with contractual characteristics that, when concentrated, may increase our exposure as a holder of those loan products. Possible product features that may create a concentration of credit risk would include a high original or updated LTV ratio, terms that may expose the borrower to future increases in repayments above increases in market interest rates and interest-only loans, among others.

We originate interest-only loans to commercial borrowers. Such credit arrangements are usually designed to match borrower cash flow expectations (*e.g.*, working capital lines, revolvers). These products are standard in the financial services industry and product features are considered during the underwriting process to mitigate the increased risk that the interest-only feature may result in borrowers not being able to make interest and principal payments when due. We do not believe that these product features create a concentration of credit risk.

At December 31, 2022, we pledged $28.1 billion of commercial and other loans to the Federal Reserve Bank and $90.4 billion of residential real estate and other loans to the FHLB as collateral for the ability to borrow, if necessary. The comparable amounts at December 31, 2021 were $25.7 billion and $66.2 billion, respectively. Amounts pledged reflect the unpaid principal balances.

Nonperforming Assets

Nonperforming assets include nonperforming loans and leases, OREO and foreclosed assets. Nonperforming loans are those loans accounted for at amortized cost whose credit quality has deteriorated to the extent that full collection of contractual principal and interest is not probable and include nonperforming TDRs and PCD loans. Interest income is not recognized on these loans. Loans accounted for under the fair value option are reported as performing loans; however, when nonaccrual criteria is met, interest income is not recognized on these loans. Additionally, certain government insured or guaranteed loans for which we expect to collect substantially all principal and interest are not reported as nonperforming loans and continue to accrue interest. See Note 1 Accounting Policies for additional information on our nonperforming loan and lease policies.

The following table presents our nonperforming assets as of December 31, 2022 and 2021, respectively.

Table 53: Nonperforming Assets

Dollars in millions	December 31, 2022	December 31, 2021
Nonperforming loans		
Commercial	$ 858	$ 1,168
Consumer (a)	1,127	1,312
Total nonperforming loans (b)	1,985	2,480
OREO and foreclosed assets	34	26
Total nonperforming assets	$ 2,019	$ 2,506
Nonperforming loans to total loans	0.61 %	0.86 %
Nonperforming assets to total loans, OREO and foreclosed assets	0.62 %	0.87 %
Nonperforming assets to total assets	0.36 %	0.45 %

(a) Excludes most unsecured consumer loans and lines of credit, which are charged off after 120 to 180 days past due and are not placed on nonperforming status.
(b) Nonperforming loans for which there is no related ALLL totaled $0.7 billion at December 31, 2022 and primarily include loans with a fair value of collateral that exceeds the amortized cost basis. The comparable amount at December 31, 2021 was $1.0 billion.

Nonperforming loans include certain loans whose terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties. In accordance with applicable accounting guidance, these loans are considered TDRs. See Note 1 Accounting Policies and the Troubled Debt Restructurings section of this Note 4 for additional information on TDRs.

Total nonperforming loans in Table 53 include TDRs of $0.7 billion and $1.0 billion at December 31, 2022 and 2021, respectively. TDRs that are performing, including consumer credit card TDR loans, are excluded from nonperforming loans and totaled $0.7 billion and $0.6 billion at December 31, 2022 and 2021, respectively.

Additional Credit Quality Indicators by Loan Class

Commercial and Industrial

For commercial and industrial loans, we monitor the performance of the borrower in a disciplined and regular manner based upon the level of credit risk inherent in the loan. To evaluate the level of credit risk, we assign an internal risk rating reflecting the borrower's PD and LGD. This two-dimensional credit risk rating methodology provides granularity in the risk monitoring process. These ratings are generally reviewed and updated at least once per year. For small balance homogeneous pools of commercial and industrial loans and leases, we apply scoring techniques to assist in determining the PD. The combination of the PD and LGD ratings assigned to commercial and industrial loans, capturing both the combination of expectations of default and loss severity in the event of default, reflects credit quality characteristics as of the reporting date and are used as inputs into our loss forecasting process.

Based upon the amount of the lending arrangement and our risk rating assessment, we follow a formal schedule of written periodic reviews. Quarterly, we conduct formal reviews of a market's or business unit's loan portfolio, focusing on those loans which we perceive to be of higher risk, based upon PDs and LGDs, or loans for which credit quality is weakening. If circumstances warrant, it is our practice to review any customer obligation and its level of credit risk more frequently. We attempt to proactively manage our loans by using various procedures that are customized to the risk of a given loan, including ongoing outreach, contact, and assessment of obligor financial conditions, collateral inspection and appraisal.

Commercial Real Estate
We manage credit risk associated with our commercial real estate projects and commercial mortgages similar to commercial and industrial loans by evaluating PD and LGD. Risks associated with commercial real estate projects and commercial mortgage activities tend to be correlated to the loan structure and collateral location, project progress and business environment. As a result, these attributes are also monitored and utilized in assessing credit risk.

As with the commercial and industrial loan class, a formal schedule of periodic reviews is also performed to assess market/geographic risk and business unit/industry risk. Often as a result of these reviews, more in-depth reviews and increased scrutiny are placed on areas of higher risk, such as adverse changes in risk ratings, deteriorating operating trends, and/or areas that concern management. These reviews are designed to assess risk and facilitate actions to mitigate such risks.

Equipment Lease Financing
We manage credit risk associated with our equipment lease financing loan class similar to commercial and industrial loans by analyzing PD and LGD.

Based upon the dollar amount of the lease and the level of credit risk, we follow a formal schedule of periodic reviews. Generally, this occurs quarterly, although we have established practices to review such credit risk more frequently if circumstances warrant. Our review process entails analysis of the following factors: equipment value/residual value, exposure levels, jurisdiction risk, industry risk, guarantor requirements and regulatory compliance as applicable.

The following table presents credit quality indicators for the commercial loan classes:

Table 54: Commercial Credit Quality Indicators (a)

December 31, 2022 In millions	Term Loans by Origination Year 2022	2021	2020	2019	2018	Prior	Revolving Loans	Revolving Loans Converted to Term	Total Loans
Commercial and industrial									
Pass Rated	$ 41,685	$ 12,493	$ 8,134	$ 6,261	$ 4,209	$ 13,165	$ 89,384	$ 69	$ 175,400
Criticized	1,259	423	277	299	297	551	3,682	31	6,819
Total commercial and industrial	42,944	12,916	8,411	6,560	4,506	13,716	93,066	100	182,219
Commercial real estate									
Pass Rated	8,835	4,153	3,266	5,511	3,005	7,454	450		32,674
Criticized	348	37	322	758	807	1,367	3		3,642
Total commercial real estate	9,183	4,190	3,588	6,269	3,812	8,821	453		36,316
Equipment lease financing									
Pass Rated	1,797	962	942	670	410	1,495			6,276
Criticized	60	55	56	39	17	11			238
Total equipment lease financing	1,857	1,017	998	709	427	1,506			6,514
Total commercial	$ 53,984	$ 18,123	$ 12,997	$ 13,538	$ 8,745	$ 24,043	$ 93,519	$ 100	$ 225,049

December 31, 2021 In millions	Term Loans by Origination Year 2021	2020	2019	2018	2017	Prior	Revolving Loans	Revolving Loans Converted to Term	Total Loans
Commercial and industrial									
Pass Rated	$ 27,104	$ 12,053	$ 10,731	$ 6,698	$ 6,355	$ 11,759	$ 71,230	$ 90	$ 146,020
Criticized	283	368	815	649	496	824	3,448	30	6,913
Total commercial and industrial	27,387	12,421	11,546	7,347	6,851	12,583	74,678	120	152,933
Commercial real estate									
Pass Rated	4,110	4,109	6,355	4,234	2,634	7,562	436		29,440
Criticized	294	298	999	820	566	1,552	46		4,575
Total commercial real estate	4,404	4,407	7,354	5,054	3,200	9,114	482		34,015
Equipment lease financing									
Pass Rated	1,212	1,190	942	682	507	1,410			5,943
Criticized	37	54	41	29	19	7			187
Total equipment lease financing	1,249	1,244	983	711	526	1,417			6,130
Total commercial	$ 33,040	$ 18,072	$ 19,883	$ 13,112	$ 10,577	$ 23,114	$ 75,160	$ 120	$ 193,078

(a) Loans in our commercial portfolio are classified as Pass Rated or Criticized based on the regulatory definitions, which are driven by the PD and LGD ratings that we assign. The Criticized classification includes loans that were rated special mention, substandard or doubtful as of December 31, 2022 and 2021.

Residential Real Estate and Home Equity

We use several credit quality indicators, including delinquency information, nonperforming loan information, updated credit scores and originated and updated LTV ratios, to monitor and manage credit risk within the residential real estate and home equity loan classes. A summary of credit quality indicators follows:

Delinquency/Delinquency Rates: We monitor trending of delinquency/delinquency rates for residential real estate and home equity loans. See Table 55 for additional information.

Nonperforming Loans: We monitor trending of nonperforming loans for residential real estate and home equity loans. See Table 55 for additional information.

Credit Scores: We use a national third-party provider to update FICO credit scores for residential real estate and home equity loans at least quarterly. The updated scores are incorporated into a series of credit management reports, which are utilized to monitor the risk in the loan classes.

LTV (inclusive of CLTV for first and subordinate lien positions): At least quarterly, we update the property values of real estate collateral and calculate an updated LTV ratio. For open-end credit lines secured by real estate in regions experiencing significant declines in property values, more frequent valuations may occur. We examine LTV migration and stratify LTV into categories to monitor the risk in the loan classes.

We use a combination of original LTV and updated LTV for internal risk management and reporting purposes (*e.g.*, line management, loss mitigation strategies). In addition to the fact that estimated property values by their nature are estimates, given certain data limitations, it is important to note that updated LTVs may be based upon management's assumptions (*i.e.*, if an updated LTV is not provided by the third-party service provider, HPI changes will be incorporated in arriving at management's estimate of updated LTV).

Updated LTV is estimated using modeled property values. The related estimates and inputs are based upon an approach that uses a combination of third-party automated valuation models, broker price opinions, HPI indices, property location, internal and external balance information, origination data and management assumptions. We generally utilize origination lien balances provided by a third-party, where applicable, which do not include an amortization assumption when calculating updated LTV. Accordingly, the results of the calculations do not represent actual appraised loan level collateral or updated LTV based upon lien balances held by others, and as such, are necessarily imprecise and subject to change as we refine our methodology.

The following table presents credit quality indicators for the residential real estate and home equity loan classes:

Table 55: Credit Quality Indicators for Residential Real Estate and Home Equity Loan Classes

	Term Loans by Origination Year								
December 31, 2022 In millions	2022	2021	2020	2019	2018	Prior	Revolving Loans	Revolving Loans Converted to Term	Total Loans
Residential real estate									
Current estimated LTV ratios									
Greater than 100%	$ 4	$ 52	$ 20	$ 10	$ 4	$ 41			$ 131
Greater than or equal to 80% to 100%	1,185	678	232	84	24	92			2,295
Less than 80%	9,396	15,844	7,074	2,346	822	7,220			42,702
No LTV available		61		3		4			68
Government insured or guaranteed loans	9	15	66	39	28	536			693
Total residential real estate	$ 10,594	$ 16,650	$ 7,392	$ 2,482	$ 878	$ 7,893			$ 45,889
Updated FICO scores									
Greater than or equal to 780	$ 6,825	$ 12,596	$ 5,276	$ 1,623	$ 463	$ 4,027			$ 30,810
720 to 779	3,172	3,024	1,369	476	180	1,457			9,678
660 to 719	514	744	378	189	98	796			2,719
Less than 660	63	108	110	88	71	740			1,180
No FICO score available	11	163	193	67	38	337			809
Government insured or guaranteed loans	9	15	66	39	28	536			693
Total residential real estate	$ 10,594	$ 16,650	$ 7,392	$ 2,482	$ 878	$ 7,893			$ 45,889
Home equity									
Current estimated LTV ratios									
Greater than 100%		$ 4	$ 14	$ 9	$ 2	$ 15	$ 268	$ 137	$ 449
Greater than or equal to 80% to 100%		4	51	27	4	31	854	1,149	2,120
Less than 80%		172	2,078	961	285	2,851	7,780	9,287	23,414
Total home equity		$ 180	$ 2,143	$ 997	$ 291	$ 2,897	$ 8,902	$ 10,573	$ 25,983
Updated FICO scores									
Greater than or equal to 780		$ 110	$ 1,357	$ 554	$ 155	$ 1,791	$ 5,093	$ 5,545	$ 14,605
720 to 779		47	515	248	64	567	2,305	2,843	6,589
660 to 719		19	211	140	42	288	1,146	1,449	3,295
Less than 660		4	57	54	29	242	342	671	1,399
No FICO score available			3	1	1	9	16	65	95
Total home equity		$ 180	$ 2,143	$ 997	$ 291	$ 2,897	$ 8,902	$ 10,573	$ 25,983

(Continued from previous page) December 31, 2021 In millions	Term Loans by Origination Year 2021	2020	2019	2018	2017	Prior	Revolving Loans	Revolving Loans Converted to Term	Total Loans
Residential real estate									
Current estimated LTV ratios									
Greater than 100%	$ 10	$ 52	$ 21	$ 12	$ 13	$ 77			$ 185
Greater than or equal to 80% to 100%	1,460	560	221	86	66	190			2,583
Less than 80%	15,213	7,822	2,834	1,004	1,570	7,385			35,828
No LTV available	275	6	1	1		22			305
Government insured or guaranteed loans	3	33	37	30	39	669			811
Total residential real estate	$ 16,961	$ 8,473	$ 3,114	$ 1,133	$ 1,688	$ 8,343			$ 39,712
Updated FICO scores									
Greater than or equal to 780	$ 11,110	$ 5,898	$ 1,996	$ 596	$ 1,029	$ 4,052			$ 24,681
720 to 779	4,921	1,735	643	247	345	1,619			9,510
660 to 719	717	463	255	136	133	796			2,500
Less than 660	83	103	96	75	94	848			1,299
No FICO score available	127	241	87	49	48	359			911
Government insured or guaranteed loans	3	33	37	30	39	669			811
Total residential real estate	$ 16,961	$ 8,473	$ 3,114	$ 1,133	$ 1,688	$ 8,343			$ 39,712
Home equity									
Current estimated LTV ratios									
Greater than 100%	$ 1	$ 16	$ 14	$ 3	$ 2	$ 25	$ 329	$ 90	$ 480
Greater than or equal to 80% to 100%	7	85	62	13	11	66	990	674	1,908
Less than 80%	204	2,487	1,189	370	549	3,200	7,868	5,806	21,673
Total home equity	$ 212	$ 2,588	$ 1,265	$ 386	$ 562	$ 3,291	$ 9,187	$ 6,570	$ 24,061
Updated FICO scores									
Greater than or equal to 780	$ 124	$ 1,619	$ 692	$ 201	$ 364	$ 2,035	$ 5,490	$ 3,320	$ 13,845
720 to 779	61	666	348	96	116	642	2,283	1,679	5,891
660 to 719	23	248	167	56	53	327	1,071	872	2,817
Less than 660	4	53	57	32	28	277	325	615	1,391
No FICO score available		2	1	1	1	10	18	84	117
Total home equity	$ 212	$ 2,588	$ 1,265	$ 386	$ 562	$ 3,291	$ 9,187	$ 6,570	$ 24,061

Automobile, Credit Card, Education and Other Consumer

We monitor a variety of credit quality information in the management of these consumer loan classes. For all loan types, we generally use a combination of internal loan parameters as well as an updated FICO score. We use FICO scores as a primary credit quality indicator for automobile and credit card loans, as well as non-government guaranteed or non-insured education loans and other secured and unsecured lines and loans. Internal credit metrics, such as delinquency status, are heavily relied upon as credit quality indicators for government guaranteed or insured education loans and consumer loans to high net worth individuals, as internal credit metrics are more relevant than FICO scores for these types of loans.

Along with the monitoring of delinquency trends and losses for each class, FICO credit score updates are obtained at least quarterly along with a variety of credit bureau attributes. Loans with high FICO scores tend to have a lower likelihood of loss. Conversely, loans with low FICO scores tend to have a higher likelihood of loss.

The following table presents credit quality indicators for the automobile, credit card, education and other consumer loan classes:

Table 56: Credit Quality Indicators for Automobile, Credit Card, Education and Other Consumer Loan Classes

	Term Loans by Origination Year								
December 31, 2022 In millions	2022	2021	2020	2019	2018	Prior	Revolving Loans	Revolving Loans Converted to Term	Total Loans
Updated FICO Scores									
Automobile									
Greater than or equal to 780	$ 2,390	$ 2,162	$ 922	$ 760	$ 241	$ 75			$ 6,550
720 to 779	1,702	1,312	561	538	222	69			4,404
660 to 719	854	660	341	401	187	56			2,499
Less than 660	193	290	230	368	228	74			1,383
Total automobile	$ 5,139	$ 4,424	$ 2,054	$ 2,067	$ 878	$ 274			$ 14,836
Credit card									
Greater than or equal to 780							$ 1,954	$ 2	$ 1,956
720 to 779							1,994	6	2,000
660 to 719							1,957	13	1,970
Less than 660							1,001	35	1,036
No FICO score available or required (a)							104	3	107
Total credit card							$ 7,010	$ 59	$ 7,069
Education									
Greater than or equal to 780	$ 42	$ 53	$ 48	$ 61	$ 51	$ 357			$ 612
720 to 779	39	27	24	30	24	143			287
660 to 719	21	8	8	9	8	59			113
Less than 660	4	1	1	2	2	24			34
No FICO score available or required (a)	20	8	7	3		1			39
Education loans using FICO credit metric	126	97	88	105	85	584			1,085
Other internal credit metrics						1,088			1,088
Total education	$ 126	$ 97	$ 88	$ 105	$ 85	$ 1,672			$ 2,173
Other consumer									
Greater than or equal to 780	$ 224	$ 97	$ 53	$ 46	$ 14	$ 18	$ 47	$ 2	$ 501
720 to 779	302	122	68	62	20	15	89	2	680
660 to 719	229	110	68	66	28	8	95	2	606
Less than 660	32	48	37	40	20	6	44	2	229
Other consumer loans using FICO credit metric	787	377	226	214	82	47	275	8	2,016
Other internal credit metrics	125	43	40	34	7	29	2,720	12	3,010
Total other consumer	$ 912	$ 420	$ 266	$ 248	$ 89	$ 76	$ 2,995	$ 20	$ 5,026

(Continued from previous page) December 31, 2021 In millions	Term Loans by Origination Year 2021	2020	2019	2018	2017	Prior	Revolving Loans	Revolving Loans Converted to Term	Total Loans
Updated FICO Scores									
Automobile									
Greater than or equal to 780	$ 3,247	$ 1,496	$ 1,380	$ 533	$ 226	$ 79			$ 6,961
720 to 779	2,119	983	1,030	499	195	62			4,888
660 to 719	969	609	772	413	155	44			2,962
Less than 660	277	315	583	429	162	58			1,824
Total automobile	$ 6,612	$ 3,403	$ 3,765	$ 1,874	$ 738	$ 243			$ 16,635
Credit card									
Greater than or equal to 780							$ 1,815	$ 2	$ 1,817
720 to 779							1,836	9	1,845
660 to 719							1,856	19	1,875
Less than 660							943	29	972
No FICO score available or required (a)							114	3	117
Total credit card							$ 6,564	$ 62	$ 6,626
Education									
Greater than or equal to 780	$ 37	$ 60	$ 77	$ 62	$ 48	$ 392			$ 676
720 to 779	20	29	37	30	21	160			297
660 to 719	7	9	11	11	7	73			118
Less than 660	1	1	2	2	2	25			33
No FICO score available or required (a)	11	10	7	2		1			31
Education loans using FICO credit metric	76	109	134	107	78	651			1,155
Other internal credit metrics						1,378			1,378
Total education	$ 76	$ 109	$ 134	$ 107	$ 78	$ 2,029			$ 2,533
Other consumer									
Greater than or equal to 780	$ 199	$ 131	$ 123	$ 47	$ 12	$ 32	$ 95	$ 1	$ 640
720 to 779	250	172	167	68	15	19	125		816
660 to 719	190	145	165	82	16	11	122		731
Less than 660	50	62	85	54	10	6	50	1	318
Other consumer loans using FICO credit metric	689	510	540	251	53	68	392	2	2,505
Other internal credit metrics	87	31	35	23	22	48	2,955	21	3,222
Total other consumer	$ 776	$ 541	$ 575	$ 274	$ 75	$ 116	$ 3,347	$ 23	$ 5,727

(a) Loans with no FICO score available or required generally refers to new accounts issued to borrowers with limited credit history, accounts for which we cannot obtain an updated FICO score (*e.g.*, recent profile changes), cards issued with a business name and/or cards secured by collateral. Management proactively assesses the risk and size of this loan category and, when necessary, takes actions to mitigate the credit risk.

Troubled Debt Restructurings

A TDR is a loan whose terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulty. See Note 1 Accounting Policies for additional information related to TDRs.

Table 57 quantifies the number of loans that were classified as TDRs as well as the change in the loans' balance as a result of becoming a TDR during 2022, 2021 and 2020. Additionally, the table provides information about the types of TDR concessions. The Principal Forgiveness TDR category includes principal forgiveness and accrued interest forgiveness. The Rate Reduction TDR category includes reduced interest rate and interest deferral. The Other TDR category primarily includes consumer borrowers that have been discharged from personal liability through Chapter 7 bankruptcy and have not formally reaffirmed their loan obligations to us, as well as postponement/reduction of scheduled amortization and contractual extensions for both consumer and commercial borrowers.

In some cases, there have been multiple concessions granted on one loan. This is most common within the commercial loan portfolio. When there have been multiple concessions granted in the commercial loan portfolio, the principal forgiveness concession was prioritized for purposes of determining the inclusion in Table 57. Second in priority would be rate reduction. In the event that multiple concessions are granted on a consumer loan, concessions resulting from discharge from personal liability through Chapter 7 bankruptcy without formal affirmation of the loan obligations to us would be prioritized and included in the Other type of concession in Table 57. After that, consumer loan concessions would follow the previously discussed priority of concessions for the commercial loan portfolio.

Table 57: Financial Impact and TDRs by Concession Type (a)

During the year ended December 31, 2022 Dollars in millions	Number of Loans	Pre-TDR Amortized Cost Basis (b)	Post-TDR Amortized Cost Basis (c) Principal Forgiveness	Rate Reduction	Other	Total
Commercial	57	$ 363	$ 9	$ 58	$ 202	$ 269
Consumer	10,809	162		123	22	145
Total TDRs	10,866	$ 525	$ 9	$ 181	$ 224	$ 414
During the year ended December 31, 2021 Dollars in millions						
Commercial	57	$ 536	$ 6		$ 510	$ 516
Consumer	6,109	108		$ 64	33	97
Total TDRs	6,166	$ 644	$ 6	$ 64	$ 543	$ 613
During the year ended December 31, 2020 Dollars in millions						
Commercial	73	$ 513	$ 39	$ 56	$ 346	$ 441
Consumer	12,270	178		88	73	161
Total TDRs	12,343	$ 691	$ 39	$ 144	$ 419	$ 602

(a) Impact of partial charge-offs at TDR date are included in this table.
(b) Represents the amortized cost basis of the loans as of the quarter end prior to TDR designation.
(c) Represents the amortized cost basis of the TDRs as of the end of the quarter in which the TDR occurs.

After a loan is determined to be a TDR, we continue to track its performance under its most recent restructured terms. We consider a TDR to have subsequently defaulted when it becomes 60 days past due after the most recent date the loan was restructured. Loans that were both (i) classified as TDRs, and (ii) subsequently defaulted during the period totaled $0.1 billion for each of the years ended December 31, 2022, 2021 and 2020, respectively.

Allowance for Credit Losses

We maintain the ACL related to loans at levels that we believe to be appropriate to absorb expected credit losses in the portfolios as of the balance sheet date. See Note 1 Accounting Policies for a discussion of the methodologies used to determine this allowance. A rollforward of the ACL related to loans follows:

Table 58: Rollforward of Allowance for Credit Losses

At or for the year ended December 31	2022			2021			2020		
In millions	Commercial	Consumer	Total	Commercial	Consumer	Total	Commercial	Consumer	Total
Allowance for loan and lease losses									
Beginning balance	$ 3,185	$ 1,683	$ 4,868	$ 3,337	$ 2,024	$ 5,361	$ 1,812	$ 930	$ 2,742
Adoption of ASU 2016-13 (a)							(304)	767	463
Beginning balance, adjusted	3,185	1,683	4,868	3,337	2,024	5,361	1,508	1,697	3,205
Acquisition PCD reserves				774	282	1,056			
Charge-offs	(307)	(678)	(985)	(434)	(667)	(1,101)	(407)	(785)	(1,192)
Recoveries	114	308	422	106	338	444	94	266	360
Net (charge-offs)	(193)	(370)	(563)	(328)	(329)	(657)	(313)	(519)	(832)
Provision for (recapture of) credit losses	126	313	439	(594)	(293)	(887)	2,139	846	2,985
Other	(4)	1	(3)	(4)	(1)	(5)	3		3
Ending balance	$ 3,114	$ 1,627	$ 4,741	$ 3,185	$ 1,683	$ 4,868	$ 3,337	$ 2,024	$ 5,361
Allowance for unfunded lending related commitments (b)									
Beginning balance	$ 564	$ 98	$ 662	$ 485	$ 99	$ 584	$ 316	$ 2	$ 318
Adoption of ASU 2016-13 (a)							53	126	179
Beginning balance, adjusted	564	98	662	485	99	584	369	128	497
Acquisition PCD reserves				43	3	46			
Provision for (recapture of) credit losses	49	(17)	32	36	(4)	32	116	(29)	87
Ending balance	$ 613	$ 81	$ 694	$ 564	$ 98	$ 662	$ 485	$ 99	$ 584
Allowance for credit losses at December 31 (c)	$ 3,727	$ 1,708	$ 5,435	$ 3,749	$ 1,781	$ 5,530	$ 3,822	$ 2,123	$ 5,945

(a) Represents the impact of adopting ASU 2016-13 - *Financial Instruments - Credit Losses* on January 1, 2020 and our transition from an incurred loss methodology for our reserves to an expected credit loss methodology.
(b) See Note 11 Commitments for additional information about the underlying commitments related to this allowance.
(c) Represents the ALLL plus allowance for unfunded lending related commitments and excludes allowances for investment securities and other financial assets, which together totaled $176 million, $171 million and $109 million at December 31, 2022, 2021 and 2020 respectively.

The ACL related to loans at December 31, 2022 totaled $5.4 billion, a decrease of $0.1 billion since December 31, 2021. The decline in reserves was primarily driven by the reassessment of pandemic-related risks and improvements in credit quality, partially offset by our weakened economic outlook along with loan growth.

NOTE 5 LOAN SALE AND SERVICING ACTIVITIES AND VARIABLE INTEREST ENTITIES

Loan Sale and Servicing Activities

We have transferred residential and commercial mortgage loans in securitization or sales transactions in which we have continuing involvement. These transfers have occurred through Agency securitization, Non-agency securitization, and loan sale transactions. Agency securitizations consist of securitization transactions with FNMA, FHLMC and GNMA (collectively, the Agencies). FNMA and FHLMC generally securitize our transferred loans into mortgage-backed securities for sale into the secondary market through SPEs that they sponsor. As an authorized GNMA issuer/servicer, we pool FHA and Department of VA insured loans into mortgage-backed securities for sale into the secondary market. In Non-agency securitizations, we have transferred loans into securitization SPEs. In other instances, third-party investors have also purchased our loans in loan sale transactions and in certain instances have subsequently sold these loans into securitization SPEs. Securitization SPEs utilized in the Agency and Non-agency securitization transactions are VIEs.

Our continuing involvement in the FNMA, FHLMC, and GNMA securitizations, Non-agency securitizations, and loan sale transactions generally consists of servicing, repurchasing previously transferred loans under certain conditions and loss share arrangements, and, in limited circumstances, holding of mortgage-backed securities issued by the securitization SPEs.

Depending on the transaction, we may act as the master, primary and/or special servicer to the securitization SPEs or third-party investors. Servicing responsibilities typically consist of collecting and remitting monthly borrower principal and interest payments, maintaining escrow deposits, performing loss mitigation and foreclosure activities, and, in certain instances, funding of servicing advances. Servicing advances, which are generally reimbursable, are made for principal and interest and collateral protection and are carried in Other assets at cost.

We earn servicing and other ancillary fees for our role as servicer and, depending on the contractual terms of the servicing arrangement, we can be terminated as servicer with or without cause. At the consummation date of each type of loan transfer where we retain the servicing, we recognize a servicing right at fair value. See Note 6 Goodwill and Mortgage Servicing Rights and Note 15 Fair Value for further discussion of our servicing rights.

Certain loans transferred to the Agencies contain ROAPs. Under these ROAPs, we hold an option to repurchase at par individual delinquent loans that meet certain criteria. In other limited cases, GNMA has granted us the right to repurchase current loans when we intend to modify the borrower's interest rate under established guidelines. When we have the unilateral ability to repurchase a loan, effective control over the loan has been regained and we recognize an asset (in either Loans or Loans held for sale) and a corresponding liability (in Other borrowed funds) on the balance sheet regardless of our intent to repurchase the loan.

The Agency and Non-agency mortgage-backed securities issued by the securitization SPEs that are purchased and held on our balance sheet are typically purchased in the secondary market. We do not retain any credit risk on our Agency mortgage-backed security positions as FNMA, FHLMC and the U.S. Government (for GNMA) guarantee losses of principal and interest.

We also have involvement with certain Agency and Non-agency commercial securitization SPEs where we have not transferred commercial mortgage loans. These SPEs were sponsored by independent third-parties and the loans held by these entities were purchased exclusively from other third-parties. Generally, our involvement with these SPEs is as servicer with servicing activities consistent with those described above.

We recognize a liability for our loss exposure associated with contractual obligations to repurchase previously transferred loans due to possible breaches of representations and warranties and also for loss sharing arrangements (recourse obligations) with the Agencies. Other than providing temporary liquidity under servicing advances and our loss exposure associated with our repurchase and recourse obligations, we have not provided nor are we required to provide any type of credit support, guarantees or commitments to the securitization SPEs or third-party investors in these transactions.

The following table provides our loan sale and servicing activities:

Table 59: Cash Flows Associated with Loan Sale and Servicing Activities

In millions	Residential Mortgages	Commercial Mortgages (a)
Cash Flows - Year ended December 31, 2022		
Sales of loans and related securitization activity (b)	$ 5,124	$ 3,332
Repurchases of previously transferred loans (c)	$ 187	$ 27
Servicing fees (d)	$ 405	$ 190
Servicing advances recovered/(funded), net	$ 11	$ 42
Cash flows on mortgage-backed securities held (e)	$ 3,790	$ 84
Cash Flows - Year ended December 31, 2021		
Sales of loans and related securitization activity (b)	$ 8,426	$ 3,611
Repurchases of previously transferred loans (c)	$ 239	$ 207
Servicing fees (d)	$ 367	$ 165
Servicing advances recovered/(funded), net	$ (33)	$ (26)
Cash flows on mortgage-backed securities held (e)	$ 9,001	$ 76

(a) Represents both commercial mortgage loan transfer and servicing activities.
(b) Gains/losses recognized on sales of loans were insignificant for the periods presented.
(c) Includes both residential and commercial mortgage government insured or guaranteed loans eligible for repurchase through the exercise of our ROAP option, as well as residential mortgage loans repurchased due to alleged breaches of origination covenants or representations and warranties made to purchasers.
(d) Includes contractually specified servicing fees, late charges and ancillary fees.
(e) Represents cash flows on securities where we transferred to, and/or service loans for, a securitization SPE and we hold securities issued by that SPE. The carrying values of such securities held were $21.4 billion in residential mortgage-backed securities and $0.7 billion in commercial mortgage-backed securities at December 31, 2022. Comparable amounts at December 31, 2021 were $17.6 billion and $0.6 billion, respectively.

Table 60 presents information about the principal balances of transferred loans that we service and are not recorded on our Consolidated Balance Sheet. We would only experience a loss on these transferred loans if we were required to repurchase a loan, where the repurchase price exceeded the loan's fair value, due to a breach in representations and warranties or a loss sharing arrangement associated with our continuing involvement with these loans. The estimate of losses related to breaches in representations and warranties was insignificant at December 31, 2022 and 2021.

Table 60: Principal Balance, Delinquent Loans and Net Charge-offs Related to Serviced Loans For Others

In millions	Residential Mortgages	Commercial Mortgages (a)
December 31, 2022		
Total principal balance	$ 41,031	$ 57,974
Delinquent loans (b)	$ 346	
December 31, 2021		
Total principal balance	$ 42,726	$ 39,551
Delinquent loans (b)	$ 569	$ 42
Year ended December 31, 2022		
Net charge-offs (c)	$ 4	$ 74
Year ended December 31, 2021		
Net charge-offs (c)	$ 4	$ 179

(a) Represents information at the securitization level in which we have sold loans and we are the servicer for the securitization.
(b) Serviced delinquent loans are 90 days or more past due or are in process of foreclosure.
(c) Net charge-offs for Residential mortgages represent credit losses less recoveries distributed and as reported to investors during the period. Net charge-offs for Commercial mortgages represent credit losses less recoveries distributed and as reported by the trustee for commercial mortgage backed securitizations. Realized losses for Agency securitizations are not reflected as we do not manage the underlying real estate upon foreclosure and, as such, do not have access to loss information.

Variable Interest Entities (VIEs)

We are involved with various entities in the normal course of business that are deemed to be VIEs. We assess VIEs for consolidation based upon the accounting policies described in Note 1 Accounting Policies. Our consolidated VIEs were insignificant at both December 31, 2022 and 2021. We have not provided additional financial support to these entities which we are not contractually required to provide.

The following table provides a summary of non-consolidated VIEs with which we have significant continuing involvement but are not the primary beneficiary. We have excluded certain transactions with non-consolidated VIEs from the balances presented in Table 61 where we have determined that our continuing involvement is insignificant. We do not consider our continuing involvement to be significant when it relates to a VIE where we only invest in securities issued by the VIE and were not involved in the design of the VIE or where no transfers have occurred between us and the VIE. In addition, where we only have lending arrangements in the normal course of business with entities that could be VIEs, we have excluded these transactions with non-consolidated entities from the balances presented in Table 61. These loans are included as part of the asset quality disclosures that we make in Note 4 Loans and Related Allowance for Credit Losses.

Table 61: Non-Consolidated VIEs

In millions	PNC Risk of Loss (a)	Carrying Value of Assets Owned by PNC	Carrying Value of Liabilities Owned by PNC
December 31, 2022			
Mortgage-backed securitizations (b)	$ 22,666	$ 22,670 (c)	$ 1
Tax credit investments and other	4,411	4,240 (d)	2,063 (e)
Total	$ 27,077	$ 26,910	$ 2,064
December 31, 2021			
Mortgage-backed securitizations (b)	$ 18,708	$ 18,708 (c)	$ 1
Tax credit investments and other	3,865	3,893 (d)	1,798 (e)
Total	$ 22,573	$ 22,601	$ 1,799

(a) Represents loans, investments and other assets related to non-consolidated VIEs, net of collateral (if applicable). The risk of loss excludes any potential tax recapture associated with tax credit investments.
(b) Amounts reflect involvement with securitization SPEs where we transferred to, and/or service loans for, an SPE and we hold securities issued by that SPE. Values disclosed in the PNC Risk of Loss column represent our maximum exposure to loss for those securities' holdings.
(c) Included in Investment securities, Mortgage servicing rights and Other assets on our Consolidated Balance Sheet.
(d) Included in Investment securities, Loans, Equity investments and Other assets on our Consolidated Balance Sheet.
(e) Included in Deposits and Other liabilities on our Consolidated Balance Sheet.

Mortgage-Backed Securitizations

In connection with each Agency and Non-agency residential and commercial mortgage-backed securitization discussed above, we evaluate each SPE utilized in these transactions for consolidation. In performing these assessments, we evaluate our level of continuing involvement in these transactions as the nature of our involvement ultimately determines whether or not we hold a variable interest and/or are the primary beneficiary of the SPE. Factors we consider in our consolidation assessment include the significance of (i) our role as servicer, (ii) our holdings of mortgage-backed securities issued by the securitization SPE and (iii) the rights of third-party variable interest holders.

The first step in our assessment is to determine whether we hold a variable interest in the securitization SPE. We hold variable interests in Agency and Non-agency securitization SPEs through our holding of residential and commercial mortgage-backed securities issued by the SPEs and/or our recourse obligations. Each SPE in which we hold a variable interest is evaluated to determine whether we are the primary beneficiary of the entity. For Agency securitization transactions, our contractual role as servicer does not give us the power to direct the activities that most significantly affect the economic performance of the SPEs. Thus, we are not the primary beneficiary of these entities. For Non-agency securitization transactions, we would be the primary beneficiary to the extent our servicing activities give us the power to direct the activities that most significantly affect the economic performance of the SPE and we hold a more-than-insignificant variable interest in the entity.

Details about the Agency and Non-agency securitization SPEs where we hold a variable interest and are not the primary beneficiary are included in Table 61. Our maximum exposure to loss as a result of our involvement with these SPEs is the carrying value of the mortgage-backed securities, servicing assets, servicing advances and our liabilities associated with our recourse obligations. Creditors of the securitization SPEs have no recourse to our assets or general credit.

Tax Credit Investments and Other

For tax credit investments in which we do not have the right to make decisions that will most significantly impact the economic performance of the entity, we are not the primary beneficiary and thus do not consolidate the entity. These investments are disclosed in Table 61. The table also reflects our maximum exposure to loss exclusive of any potential tax credit recapture. Our maximum exposure to loss is equal to our legally binding equity commitments adjusted for recorded impairment, partnership results or amortization for qualifying low income housing tax credit investments when applicable. For all legally binding unfunded equity commitments, we increase our recognized investment and recognize a liability. As of December 31, 2022, we had a liability for unfunded commitments of $2.2 billion related to investments in qualified affordable housing projects which is reflected in Other liabilities on our Consolidated Balance Sheet.

Table 61 also includes our involvement in lease financing transactions with LLCs engaged in solar power generation that, to a large extent, provided returns in the form of tax credits. The outstanding financings and operating lease assets are reflected as Loans and Other assets, respectively, on our Consolidated Balance Sheet, whereas related liabilities are reported in Deposits and Other liabilities.

We make certain equity investments in various tax credit limited partnerships or LLCs. The purpose of these investments is to achieve a satisfactory return on capital and to assist us in achieving goals associated with the CRA. During 2022, we recognized $0.4 billion of amortization, $0.4 billion of tax credits and less than $0.1 billion of other tax benefits associated with qualified investments in LIHTCs within Income taxes. We recognized $0.3 billion of amortization, $0.3 billion of tax credits and less than $0.1 billion of other tax benefits associated with qualified investments in LIHTCs within Income taxes in 2021. Comparable amounts for 2020 were $0.2 billion, $0.2 billion and less than $0.1 billion, respectively.

NOTE 6 GOODWILL AND MORTGAGE SERVICING RIGHTS

Assets and liabilities of acquired entities are recorded at estimated fair value as of the acquisition date.

Goodwill

Allocations of Goodwill by business segment at December 31, 2022, 2021 and 2020 follow:

Table 62: Goodwill by Business Segment

In millions	Retail Banking	Corporate & Institutional Banking	Asset Management Group	Total
Balance as of December 31, 2022	$ 6,473	$ 4,325	$ 189	$ 10,987
Other		71		71
Balance as of December 31, 2021	$ 6,473	$ 4,254	$ 189	$ 10,916
BBVA acquisition	678	796	125	1,599
Other		84		84
Balance as of December 31, 2020	$ 5,795	$ 3,374	$ 64	$ 9,233

Goodwill increased during 2021 primarily as a result of the acquisition of BBVA. Goodwill was recorded and allocated to each of our three business segments and is not deductible for income tax purposes. See Note 2 Acquisition and Divestiture Activities for additional information.

We review goodwill in each of our reporting units for impairment at least annually, in the fourth quarter, or more frequently if events occur or circumstances have changed significantly from the annual test date. Based on the results of our analysis, there were no impairment charges related to goodwill in 2022, 2021 or 2020.

Mortgage Servicing Rights

We recognize the right to service mortgage loans for others as an intangible asset when the benefits of servicing are expected to be more than adequate compensation to a servicer for performing the servicing. MSRs are recognized either when purchased or when originated loans are sold with servicing retained. MSRs totaled $3.4 billion at December 31, 2022 and $1.8 billion at December 31, 2021, and consisted of loan servicing contracts for commercial and residential mortgages measured at fair value.

Commercial Mortgage Servicing Rights

We recognize gains (losses) on changes in the fair value of commercial MSRs. Commercial MSRs are subject to changes in value from actual or expected prepayment of the underlying loans and defaults as well as market driven changes in interest rates. We manage this risk by economically hedging the fair value of commercial MSRs with securities, derivative instruments and resale agreements which are expected to increase (or decrease) in value when the value of commercial MSRs decreases (or increases).

The fair value of commercial MSRs is estimated by using a discounted cash flow model incorporating inputs for assumptions as to constant prepayment rates, discount rates and other factors determined based on current market conditions and expectations.

Changes in the commercial MSRs follow:

Table 63: Commercial Mortgage Servicing Rights

In millions	2022	2021	2020
January 1	$ 740	$ 569	$ 649
Additions:			
From loans sold with servicing retained	62	87	100
Purchases	46	41	44
Changes in fair value due to:			
Time and payoffs (a)	(208)	(119)	(115)
Other (b)	473	162	(109)
December 31	$ 1,113	$ 740	$ 569
Related unpaid principal balance at December 31	$ 281,277	$ 272,556	$ 243,960
Servicing advances at December 31	$ 421	$ 463	$ 437

(a) Represents decrease in MSR value due to passage of time, including the impact from both regularly scheduled loan principal payments, prepayments and loans paid off during the period.
(b) Represents MSR value changes resulting primarily from market-driven changes in interest rates.

Residential Mortgage Servicing Rights
We recognize gains (losses) on changes in the fair value of residential MSRs. Residential MSRs are subject to changes in value from actual or expected prepayment of the underlying loans and defaults as well as market driven changes in interest rates. We manage this risk by economically hedging the fair value of residential MSRs with securities and derivative instruments that are expected to increase (or decrease) in value when the value of residential MSRs decreases (or increases).

The fair value of residential MSRs is estimated by using a discounted cash flow valuation model that calculates the present value of estimated future net servicing cash flows, taking into consideration actual and expected mortgage loan prepayment rates, discount rates, servicing costs, and other factors that are determined based on current market conditions.

Changes in the residential MSRs follow:

Table 64: Residential Mortgage Servicing Rights

In millions	2022	2021	2020
January 1	$ 1,078	$ 673	$ 995
Additions:			
BBVA Acquisition		35	
From loans sold with servicing retained	57	87	45
Purchases	897	411	208
Changes in fair value due to:			
Time and payoffs (a)	(231)	(320)	(198)
Other (b)	509	192	(377)
December 31	$ 2,310	$ 1,078	$ 673
Unpaid principal balance of loans serviced for others at December 31	$ 189,831	$ 132,953	$ 120,778
Servicing advances at December 31	$ 165	$ 176	$ 143

(a) Represents decrease in MSR value due to passage of time, including the impact from both regularly scheduled loan principal payments, prepayments and loans paid off during the period.
(b) Represents MSR value changes resulting from market-driven changes in interest rates.

Sensitivity Analysis
The fair value of commercial and residential MSRs and significant inputs to the valuation models as of December 31, 2022 and December 31, 2021 are shown in Tables 65 and 66. The expected and actual rates of mortgage loan prepayments are significant factors driving the fair value. Management uses both internal proprietary models and a third-party model to estimate future commercial mortgage loan prepayments and a third-party model to estimate future residential mortgage loan prepayments. These models have been refined based on current market conditions and management judgment. Future interest rates are another important factor in the valuation of MSRs. Management utilizes market implied forward interest rates to estimate the future direction of mortgage and discount rates. The forward rates utilized are derived from the current yield curve for U.S. dollar interest rate swaps and are consistent with pricing of capital markets instruments. Changes in the shape and slope of the forward curve in future periods may result in volatility in the fair value estimate.

A sensitivity analysis of the hypothetical effect on the fair value of MSRs to adverse changes in key assumptions is presented in Tables 65 and 66. These sensitivities do not include the impact of the related hedging activities. Changes in fair value generally cannot be extrapolated because the relationship of the change in the assumption to the change in fair value may not be linear. Also, the effect of a variation in a particular assumption on the fair value of the MSRs is calculated independently without changing any other assumption. In reality, changes in one factor may result in changes in another (*e.g.*, changes in mortgage interest rates, which drive changes in prepayment rate estimates, could result in changes in the interest rate spread), which could either magnify or counteract the sensitivities.

The following tables set forth the fair value of commercial and residential MSRs and the sensitivity analysis of the hypothetical effect on the fair value of MSRs to immediate adverse changes of 10% and 20% in those assumptions:

Table 65: Commercial Mortgage Servicing Rights – Key Valuation Assumptions

Dollars in millions	December 31, 2022	December 31, 2021
Fair value	$ 1,113	$ 740
Weighted-average life (years)	4.0	4.2
Weighted-average constant prepayment rate	4.28 %	5.49 %
Decline in fair value from 10% adverse change	$ 8	$ 12
Decline in fair value from 20% adverse change	$ 15	$ 21
Effective discount rate	9.77 %	7.75 %
Decline in fair value from 10% adverse change	$ 34	$ 20
Decline in fair value from 20% adverse change	$ 68	$ 40

Table 66: Residential Mortgage Servicing Rights – Key Valuation Assumptions

Dollars in millions	December 31, 2022	December 31, 2021
Fair value	$ 2,310	$ 1,078
Weighted-average life (years)	8.0	5.7
Weighted-average constant prepayment rate	6.72 %	12.63 %
Decline in fair value from 10% adverse change	$ 55	$ 46
Decline in fair value from 20% adverse change	$ 107	$ 89
Weighted-average option adjusted spread	766 bps	857 bps
Decline in fair value from 10% adverse change	$ 69	$ 31
Decline in fair value from 20% adverse change	$ 134	$ 60

Fees from mortgage loan servicing, which include contractually specified servicing fees, late fees and ancillary fees were $0.6 billion for 2022 and $0.5 billion for both 2021 and 2020. We also generate servicing fees from fee-based activities provided to others for which we do not have an associated servicing asset. Fees from commercial and residential MSRs are reported within Noninterest income on our Consolidated Income Statement in Residential and commercial mortgage.

NOTE 7 LEASES

PNC enters into both lessor and lessee arrangements. For more information on lease accounting, see Note 1 Accounting Policies and for additional details on our equipment lease financing receivables see Note 4 Loans and Related Allowance for Credit Losses.

Lessor Arrangements
PNC's lessor arrangements primarily consist of direct financing, sales-type and operating leases for equipment. Lease agreements may include options to renew and for the lessee to purchase the leased equipment at the end of the lease term.

The following table provides details on our income from lessor arrangements:

Table 67: Lessor Income

Year ended December 31 In millions	2022	2021	2020
Sales-type and direct financing leases (a)	$ 243	$ 243	$ 269
Operating leases (b)	63	75	95
Lease income	$ 306	$ 318	$ 364

(a) Included in Loans interest income on the Consolidated Income Statement.
(b) Included in Lending and deposit services on the Consolidated Income Statement.

The following table provides the components of our equipment lease financing assets:

Table 68: Sales-Type and Direct Financing Leases

In millions	December 31, 2022	December 31, 2021
Lease receivables	$ 5,853	$ 5,829
Unguaranteed residual asset values (a)	1,422	977
Unearned income	(761)	(677)
Equipment lease financing	$ 6,514	$ 6,129

(a) In certain cases, PNC obtains third-party residual value insurance to reduce its residual risk. The carrying value of residual assets with third-party residual value insurance for at least a portion of the asset value was $0.4 billion for both 2022 and 2021.

Operating lease assets were $0.8 billion and accumulated depreciation was $0.2 billion at December 31, 2022 compared to operating lease assets of $0.9 billion and accumulated depreciation of $0.2 billion at December 31, 2021. We had no lease transactions with related parties or deferred selling profits at December 31, 2022 and 2021.

The future minimum lessor receivable arrangements at December 31, 2022 were as follows:

Table 69: Future Minimum Lessor Receivable Arrangements

In millions	Operating Leases	Sales-type and Direct Financing Leases
2023	$ 46	$ 1,474
2024	37	1,256
2025	28	890
2026	21	621
2027	11	609
2028 and thereafter	16	1,003
Total future minimum lease receivable arrangements	$ 159	$ 5,853

Lessee Arrangements

We lease retail branches, datacenters, office space, land and equipment under operating and finance leases. Our leases have remaining lease terms of 1 year to 45 years, some of which may include options to renew the leases for up to 99 years, and some of which may include options to terminate the leases prior to the end date of the lease term. Certain leases also include options to purchase the leased asset. The exercise of lease renewal, termination and purchase options is at our sole discretion.

Certain of our lease agreements include rental payments based on a percentage of revenue and others include rental payments if certain bank deposit levels are met. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants. Subleases to third parties were not material at December 31, 2022 and 2021.

Tables 70 and 71 provide details on our operating leases:

Table 70: Operating Lease Costs and Cash Flows

Year ended December 31 In millions	2022	2021	2020
Operating lease cost (a)	$ 395	$ 386	$ 358
Operating cash flows	$ 434	$ 400	$ 360

(a) Included in Occupancy, Equipment and Marketing expense on the Consolidated Income Statement.

Table 71: Operating Lease Assets and Liabilities

In millions	December 31, 2022	December 31, 2021
Operating lease assets (a)	$ 1,857	$ 1,919
Operating lease liabilities (b)	$ 2,160	$ 2,220

(a) Included in Other assets on the Consolidated Balance Sheet.
(b) Included in Accrued expenses and other liabilities on the Consolidated Balance Sheet.

Finance lease assets and liabilities, income, expense and cash flows at December 31, 2022 and 2021 were not material.

Operating lease term and discount rates of our lessee arrangements at December 31, 2022 and 2021 were as follows:

Table 72: Operating Lease Term and Discount Rates of Lessee Arrangements

	December 31, 2022	December 31, 2021
Weighted-average remaining lease term (years)	7	8
Weighted-average discount rate	2.24 %	1.99 %

The future lease payments based on maturity for our lessee liability arrangements at December 31, 2022 are as follows:

Table 73: Future Lease Payments for Operating Lease Liability Arrangements

In millions	December 31, 2022
2023	$ 428
2024	385
2025	343
2026	291
2027	247
2028 and thereafter	657
Total future lease payments	$ 2,351
Less: Interest	191
Present value of operating lease liability arrangements	$ 2,160

NOTE 8 PREMISES, EQUIPMENT AND LEASEHOLD IMPROVEMENTS

Premises, equipment and leasehold improvements, stated at cost less accumulated depreciation and amortization, were as follows:

Table 74: Premises, Equipment and Leasehold Improvements

In millions	December 31 2022	December 31 2021
Premises, equipment and leasehold improvements	$ 17,769	$ 16,651
Accumulated depreciation and amortization	(9,015)	(8,058)
Net book value	$ 8,754	$ 8,593

Depreciation expense on premises, equipment and leasehold improvements, as well as amortization expense, excluding intangible assets, primarily for capitalized internally developed software are shown in the following table:

Table 75: Depreciation and Amortization Expense

Year ended December 31 In millions	2022	2021	2020
Depreciation	$ 899	$ 844	$ 791
Amortization	130	122	115
Total depreciation and amortization	$ 1,029	$ 966	$ 906

NOTE 9 TIME DEPOSITS

The aggregate amount of time deposit accounts (including certificates of deposits) in denominations that met or exceeded the insured limit were $10.4 billion and $7.7 billion at December 31, 2022, and 2021, respectively.

Table 76 shows the total amount of time deposits at December 31, 2022 by future contractual maturity range:

Table 76: Time Deposits

In billions	
2023	$ 15.9
2024	$ 1.8
2025	$ 0.2
2026	$ 0.2
2027	$ 0.1
2028 and thereafter	$ 0.3
Total	$ 18.5

NOTE 10 BORROWED FUNDS

The following table shows the carrying value of total borrowed funds at December 31, 2022 (including adjustments related to accounting hedges, purchase accounting and unamortized original issuance discounts) by remaining contractual maturity:

Table 77: Borrowed Funds

In millions	
2023	$ 4,332
2024	$ 20,673
2025	$ 14,931
2026	$ 5,666
2027	$ 1,659
2028 and thereafter	$ 11,465
Total	$ 58,726

The following table presents the contractual rates and maturity dates of our FHLB borrowings, senior debt and subordinated debt as of December 31, 2022 and the carrying values as of December 31, 2022 and 2021.

Table 78: FHLB Borrowings, Senior Debt and Subordinated Debt

	Stated Rate	Maturity	Carrying Value	
Dollars in millions	2022	2022	2022	2021
Parent Company				
Senior debt	1.15% - 6.04%	2024 - 2033	$ 11,374	$ 10,369
Subordinated debt	3.90% - 4.63%	2024 - 2033	1,524	777
Junior subordinated debt	5.33 %	2028	205	205
Subtotal			13,103	11,351
Bank				
Federal Home Loan Bank borrowings (a)	4.48% - 4.72%	2023 - 2026	32,075	
Senior debt	2.50% - 5.07%	2023 - 2043	5,283	10,292
Subordinated debt	2.70% - 5.90%	2023 - 2029	4,578	6,014
Subtotal			41,936	16,306
Total			$ 55,039	$ 27,657

(a) FHLB borrowings are generally collateralized by residential mortgage loans, other mortgage-related loans and investment securities.

In Table 78, the carrying values for Parent Company senior and subordinated debt include basis adjustments of $(723) million and $(72) million, respectively, whereas Bank senior and subordinated debt include basis adjustments of $(256) million and $(232) million, respectively, related to fair value accounting hedges as of December 31, 2022.

Certain borrowings are reported at fair value, refer to Note 15 Fair Value for more information on those borrowings.

Junior Subordinated Debentures

PNC Capital Trust C, a wholly-owned finance subsidiary of The PNC Financial Services Group, Inc., owns junior subordinated debentures issued by PNC with a carrying value of $205 million. In June 1998, PNC Capital Trust C issued $200 million of trust preferred securities which bear interest at an annual rate of 3 month LIBOR plus 57 basis points. The trust preferred securities are currently redeemable by PNC Capital Trust C at par. In accordance with GAAP, the financial statements of the Trust are not included in our consolidated financial statements.

The obligations of The PNC Financial Services Group, Inc., as the parent of the Trust, when taken collectively, are the equivalent of a full and unconditional guarantee of the obligations of the Trust under the terms of the trust preferred securities. Such guarantee is subordinate in right of payment in the same manner as other junior subordinated debt. There are certain restrictions on our overall ability to obtain funds from our subsidiaries. For additional disclosure on these funding restrictions, see Note 20 Regulatory Matters.

We are subject to certain restrictions, including restrictions on dividend payments, in connection with the outstanding junior subordinated debentures. Generally, if (i) there is an event of default under the debentures, (ii) we elect to defer interest on the debentures, (iii) we exercise our right to defer payments on the related trust preferred securities, or (iv) there is a default under our guarantee of such payment obligations, subject to certain limited exceptions, we would be unable during the period of such default or deferral to make payments on our debt securities that rank equal or junior to the debentures as well as to make payments on our equity securities, including dividend payments.

NOTE 11 COMMITMENTS

In the normal course of business, we have various commitments outstanding, certain of which are not included on our Consolidated Balance Sheet. The following table presents our outstanding commitments to extend credit along with other commitments as of December 31, 2022 and 2021.

Table 79: Commitments to Extend Credit and Other Commitments

In millions	December 31, 2022	December 31, 2021
Commitments to extend credit		
Commercial	$ 198,542	$ 176,248
Home equity	22,783	19,410
Credit card	33,066	32,499
Other	7,337	9,081
Total commitments to extend credit	261,728	237,238
Net outstanding standby letters of credit (a)	10,575	9,303
Standby bond purchase agreements (b)	1,208	1,268
Other commitments (c)	3,661	3,045
Total commitments to extend credit and other commitments	$ 277,172	$ 250,854

(a) Net outstanding standby letters of credit include $3.6 billion and $3.3 billion at December 31, 2022 and 2021, respectively, which support remarketing programs.
(b) We enter into standby bond purchase agreements to support municipal bond obligations.
(c) Includes $2.2 billion and $2.0 billion related to investments in qualified affordable housing projects at December 31, 2022 and 2021, respectively.

Commitments to Extend Credit

Commitments to extend credit, or net unfunded loan commitments, represent arrangements to lend funds or provide liquidity subject to specified contractual conditions. These commitments generally have fixed expiration dates, may require payment of a fee and generally contain termination clauses in the event the customer's credit quality deteriorates.

Net Outstanding Standby Letters of Credit

We issue standby letters of credit and share in the risk of standby letters of credit issued by other financial institutions, in each case to support obligations of our customers to third parties, such as insurance requirements and the facilitation of transactions involving capital markets product execution. Approximately 98% of our net outstanding standby letters of credit were rated as Pass at December 31, 2022, with the remainder rated as Criticized. An internal credit rating of Pass indicates the expected risk of loss is currently low, while a rating of Criticized indicates a higher degree of risk.

If the customer fails to meet its financial or performance obligation to the third party under the terms of the contract or there is a need to support a remarketing program, then upon a draw by a beneficiary, subject to the terms of the letter of credit, we would be obligated to make payment to them. The standby letters of credit outstanding on December 31, 2022 had terms ranging from less than one year to eight years.

As of December 31, 2022, assets of $1.3 billion secured certain specifically identified standby letters of credit. In addition, a portion of the remaining standby letters of credit issued on behalf of specific customers is also secured by collateral or guarantees that secure the customers' other obligations to us. The carrying amount of the liability for our obligations related to standby letters of credit and participations in standby letters of credit was $0.2 billion at December 31, 2022 and is included in Other liabilities on our Consolidated Balance Sheet.

NOTE 12 EQUITY

Preferred Stock

The following table provides the number of preferred shares issued and outstanding, the liquidation value per share and the number of authorized preferred shares:

Table 80: Preferred Stock - Authorized, Issued and Outstanding

December 31 Shares in thousands	Liquidation value per share	Preferred Shares 2022	Preferred Shares 2021
Authorized			
$1 par value		20,000	20,000
Issued and outstanding			
Series B	$ 40	1	1
Series O	$ 100,000	10	10
Series P (a)	$ 100,000		15
Series R	$ 100,000	5	5
Series S	$ 100,000	5	5
Series T	$ 100,000	15	15
Series U	$ 100,000	10	
Series V	$ 100,000	12	
Total issued and outstanding		58	51

(a) On November 1, 2022, PNC redeemed all 15,000 shares of its Series P Preferred Stock, as well as all 60 million Depositary Shares each representing a fractional interest in such shares.

The following table discloses information related to the preferred stock outstanding as of December 31, 2022:

Table 81: Terms of Outstanding Preferred Stock

Preferred Stock	Issue Date	Number of Depositary Shares Issued and Outstanding	Fractional Interest in a Share of Preferred Stock Represented by Each Depositary Share	Dividend Dates (a)	Annual Per Share Dividend Rate	Optional Redemption Date (b)
Series B (c)	(c)	N/A	N/A	Quarterly from March 10th	$ 1.80	None
Series O (d)	July 27, 2011	1 million	1/100th	Semi-annually beginning on February 1, 2012 until August 1, 2021 Quarterly beginning on November 1, 2021	6.75% until August 1, 2021 3 Mo. LIBOR plus 3.678% per annum beginning on August 1, 2021	August 1, 2021
Series R (d)	May 7, 2013	500,000	1/100th	Semi-annually beginning on December 1, 2013 until June 1, 2023 Quarterly beginning on September 1, 2023	4.85% until June 1, 2023 3 Mo. LIBOR plus 3.04% per annum beginning June 1, 2023	June 1, 2023
Series S (d)	November 1, 2016	525,000	1/100th	Semi-annually beginning on May 1, 2017 until November 1, 2026 Quarterly beginning on February 1, 2027	5.00% until November 1, 2026 3 Mo. LIBOR plus 3.30% per annum beginning November 1, 2026	November 1, 2026
Series T (d)	September 13, 2021	1.5 million	1/100th	Quarterly beginning on December 15, 2021	3.40% until September 15, 2026 5 Yr. U.S. Treasury plus 2.595% per annum beginning September 15, 2026	September 15, 2026
Series U (d)	April 26, 2022	1 million	1/100th	Quarterly beginning on August 15, 2022	6.00% until May 15, 2027 5 Yr. U.S. Treasury plus 3.00% per annum beginning May 15, 2027	May 15, 2027
Series V (d)	August 19, 2022	1.25 million	1/100th	Quarterly beginning on December 15, 2022	6.20% until September 15, 2027 5 Yr. U.S. Treasury plus 3.238% per annum beginning September 15, 2027	September 15, 2027

(a) Dividends are payable when, as, and if declared by our Board of Directors or an authorized committee of our Board of Directors.
(b) Redeemable at our option on or after the date stated. With the exception of the Series B preferred stock, also redeemable at our option within 90 days of a regulatory capital treatment event as defined in the designations.
(c) Cumulative preferred stock. Holders of Series B preferred stock are entitled to 8 votes per share, which is equal to the number of full shares of common stock into which the Series B preferred stock is convertible. The Series B preferred stock was issued in connection with the consolidation of Pittsburgh National Corporation and Provident National Corporation in 1983.
(d) Non-Cumulative preferred stock.

Each outstanding series of preferred stock, other than the Series B, contains restrictions on our ability to pay dividends and make other shareholder payments. Subject to limited exceptions, if dividends are not paid on any such series of preferred stock, we cannot declare dividends on or repurchase shares of our common stock. In addition, if we would like to repurchase shares of preferred stock, such repurchases must be on a pro rata basis with respect to all such series of preferred stock.

The following table provides the dividends per share for PNC's common and preferred stock:

Table 82: Dividends Per Share

December 31	2022	2021	2020
Common Stock	$ 5.75	$ 4.80	$ 4.60
Preferred Stock			
Series B	$ 1.80	$ 1.80	$ 1.80
Series O	$ 4,881	$ 7,722	$ 6,750
Series P	$ 6,181	$ 6,125	$ 6,125
Series Q			$ 4,031
Series R	$ 4,850	$ 4,850	$ 4,850
Series S	$ 5,000	$ 5,000	$ 5,000
Series T	$ 3,400	$ 869	
Series U	$ 3,317		
Series V	$ 1,998		

On January 4, 2023, the PNC Board of Directors declared a quarterly cash dividend on common stock of $1.50 per share. The dividend, with a payment date of February 5, 2023, was paid on the next business day.

Other Shareholders' Equity Matters

At December 31, 2022, we had reserved approximately 79 million common shares to be issued in connection with certain stock plans.

Consistent with the SCB framework, which allows for capital return in amounts in excess of the SCB minimum levels, our Board of Directors has authorized a repurchase framework under the repurchase program approved on April 4, 2019 of up to 100 million common shares, of which approximately 49% were still available for repurchase at December 31, 2022. Under this framework, PNC expects quarterly repurchases of up to $500 million with the ability to adjust those levels as conditions warrant. PNC's SCB for the four-quarter period beginning October 1, 2022 is 2.9%.

NOTE 13 OTHER COMPREHENSIVE INCOME

Details of other comprehensive income (loss) are as follows:

Table 83: Other Comprehensive Income (Loss)

	Year ended December 31								
	2022			2021			2020		
In millions	Pre-tax	Tax effect	After-tax	Pre-tax	Tax effect	After-tax	Pre-tax	Tax effect	After-tax
Debt securities									
Net Unrealized gains (losses) on securities	$(10,866)	$ 2,561	$ (8,305)	$ (2,445)	$ 576	$ (1,869)	$ 2,113	$ (485)	$ 1,628
Less: Net realized gains (losses) reclassified to earnings (a)	(723)	171	(552)	6	(2)	4	302	(69)	233
Net change	(10,143)	2,390	(7,753)	(2,451)	578	(1,873)	1,811	(416)	1,395
Cash flow hedge derivatives									
Net Unrealized gains (losses) on cash flow hedge derivatives	(3,536)	833	(2,703)	(632)	149	(483)	918	(211)	707
Less: Net realized gains (losses) reclassified to earnings (a)	(260)	61	(199)	494	(117)	377	421	(97)	324
Net change	(3,276)	772	(2,504)	(1,126)	266	(860)	497	(114)	383
Pension and other postretirement benefit plan adjustments									
Net pension and other postretirement benefit plan activity and other reclassified to earnings (b)	(363)	85	(278)	486	(114)	372	82	(19)	63
Net change	(363)	85	(278)	486	(114)	372	82	(19)	63
Other									
Net unrealized gains (losses) on other transactions	(5)	(41)	(46)	4	(4)		10	5	15
Net change	(5)	(41)	(46)	4	(4)		10	5	15
Total other comprehensive income (loss) from continuing operations	(13,787)	3,206	(10,581)	(3,087)	726	(2,361)	2,400	(544)	1,856
Total other comprehensive income from discontinued operations							148	(33)	115
Total other comprehensive income (loss)	$(13,787)	$ 3,206	$(10,581)	$ (3,087)	$ 726	$ (2,361)	$ 2,548	$ (577)	$ 1,971

(a) Reclassifications for pre-tax debt securities and cash flow hedges are recorded in interest income and noninterest income on the Consolidated Income Statement.
(b) Reclassifications include amortization of actuarial losses (gains) and amortization of prior period services costs (credits) which are recorded in noninterest expense on the Consolidated Income Statement.

Table 84: Accumulated Other Comprehensive Income (Loss) Components

In millions, after-tax	Debt securities	Cash flow hedge derivatives	Pension and other postretirement benefit plan adjustments	Other	Accumulated other Comprehensive Income from Continuing Operations	Accumulated other Comprehensive Income from Discontinued Operations	Total
Balance at December 31, 2019	$ 1,067	$ 276	$ (408)	$ (21)	$ 914	$ (115)	$ 799
Net Activity	1,395	383	63	15	1,856	115	1,971
Balance at December 31, 2020	$ 2,462	$ 659	$ (345)	$ (6)	$ 2,770		$ 2,770
Net activity	(1,873)	(860)	372		(2,361)		(2,361)
Balance at December 31, 2021	$ 589	$ (201)	$ 27	$ (6)	$ 409		$ 409
Net activity	(7,753)	(2,504)	(278)	(46)	(10,581)		(10,581)
Balance at December 31, 2022 (a)	$ (7,164)	$ (2,705)	$ (251)	$ (52)	$ (10,172)		$(10,172)

(a) At December 31, 2022, AOCI included pretax losses of $314 million from derivatives that hedged the purchase of investment securities classified as held to maturity.

NOTE 14 EARNINGS PER SHARE

Table 85: Basic and Diluted Earnings Per Common Share

In millions, except per share data	2022	2021	2020
Basic			
Net income from continuing operations	$ 6,113	$ 5,725	$ 3,003
Less:			
Net income attributable to noncontrolling interests	72	51	41
Preferred stock dividends	301	233	229
Preferred stock discount accretion and redemptions	5	5	4
Net income from continuing operations attributable to common shareholders	5,735	5,436	2,729
Less: Dividends and undistributed earnings allocated to nonvested restricted shares	27	27	13
Net income from continuing operations attributable to basic common shareholders	$ 5,708	$ 5,409	$ 2,716
Net income from discontinued operations attributable to common shareholders			$ 4,555
Less: Undistributed earnings allocated to nonvested restricted shares			22
Net income from discontinued operations attributable to basic common shareholders			$ 4,533
Basic weighted-average common shares outstanding	412	426	427
Basic earnings per common share from continuing operations (a)	$ 13.86	$ 12.71	$ 6.37
Basic earnings per common share from discontinued operations (a)			$ 10.62
Basic earnings per common share	$ 13.86	$ 12.71	$ 16.99
Diluted			
Net income from continuing operations attributable to diluted common shareholders	$ 5,708	$ 5,409	$ 2,716
Net income from discontinued operations attributable to basic common shareholders			$ 4,533
Less: Impact of earnings per share dilution from discontinued operations			2
Net income from discontinued operations attributable to diluted common shareholders			$ 4,531
Basic weighted-average common shares outstanding	412	426	427
Diluted weighted-average common shares outstanding	412	426	427
Diluted earnings per common share from continuing operations (a)	$ 13.85	$ 12.70	$ 6.36
Diluted earnings per common share from discontinued operations (a)			$ 10.60
Diluted earnings per common share	$ 13.85	$ 12.70	$ 16.96

(a) Basic and diluted earnings per share under the two-class method are determined on net income reported on the income statement less earnings allocated to nonvested restricted shares and restricted share units with nonforfeitable dividends and dividend rights (participating securities).

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.

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.

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.

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 considering 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 88. 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.

<u>Residential MSRs</u>

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.

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.

<u>Commercial MSRs</u>

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 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, 2022 and 2021 are included in the Insignificant Level 3 assets, net of liabilities line item in Table 88 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 the pending interchange 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 included 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 88 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 88 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 86: Fair Value Measurements – Recurring Basis Summary

	December 31, 2022				December 31, 2021			
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		$ 411	$ 243	$ 654		$ 1,221	$ 81	$ 1,302
Commercial mortgage loans held for sale		243	33	276		526	49	575
Securities available for sale								
U.S. Treasury and government agencies	$ 8,108	262		8,370	$ 41,873	4,291		46,164
Residential mortgage-backed								
Agency		28,823		28,823		67,632		67,632
Non-agency			819	819		61	1,097	1,158
Commercial mortgage-backed								
Agency		1,675		1,675		1,773		1,773
Non-agency		1,253	3	1,256		3,433	3	3,436
Asset-backed		5	124	129		6,246	163	6,409
Other		3,032	55	3,087		4,895	69	4,964
Total securities available for sale	8,108	35,050	1,001	44,159	41,873	88,331	1,332	131,536
Loans		541	769	1,310		617	884	1,501
Equity investments (a)	1,173		1,778	3,147	1,373		1,680	3,231
Residential mortgage servicing rights			2,310	2,310			1,078	1,078
Commercial mortgage servicing rights			1,113	1,113			740	740
Trading securities (b)	798	1,168		1,966	250	1,601		1,851
Financial derivatives (b) (c)	16	3,747	5	3,768	5	5,109	38	5,152
Other assets	352	80		432	404	114		518
Total assets (d)	$ 10,447	$ 41,240	$ 7,252	$ 59,135	$ 43,905	$ 97,519	$ 5,882	$147,484
Liabilities								
Other borrowed funds	$ 1,230	$ 232	$ 4	$ 1,466	$ 725	$ 45	$ 3	$ 773
Financial derivatives (c) (e)	4	7,491	123	7,618		3,285	285	3,570
Other liabilities			294	294			175	175
Total liabilities (f)	$ 1,234	$ 7,723	$ 421	$ 9,378	$ 725	$ 3,330	$ 463	$ 4,518

(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, 2022 and 2021 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 11% and 26% at December 31, 2022 and 2021, respectively. Level 3 assets as a percentage of total assets at fair value was 12% and 4% as of December 31, 2022 and 2021, respectively. Level 3 assets as a percentage of total consolidated assets was 1% at both December 31, 2022 and 2021.

(e) Included in Other liabilities on the Consolidated Balance Sheet.

(f) Total liabilities at fair value as a percentage of total consolidated liabilities was 2% and 1% at December 31, 2022 and 2021, respectively. Level 3 liabilities as a percentage of total liabilities at fair value was 4% and 10% as of December 31, 2022 and 2021, respectively. Level 3 liabilities as a percentage of total consolidated liabilities was less than 1% at both December 31, 2022 and 2021.

Reconciliations of assets and liabilities measured at fair value on a recurring basis using Level 3 inputs for 2022 and 2021 are as follows:

Table 87: Reconciliation of Level 3 Assets and Liabilities

Year Ended December 31, 2022

		Total realized / unrealized gains or losses for the period (a)									
Level 3 Instruments Only In millions	Fair Value Dec. 31, 2021	Included in Earnings	Included in Other comprehensive income (b)	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Fair Value Dec. 31, 2022	Unrealized gains / losses for the period on assets and liabilities held on Consolidated Balance Sheet at Dec. 31, 2022 (a) (c)
Assets											
Residential mortgage loans held for sale	$ 81	$ (5)		$ 226	$ (34)		$ (13)	$ 29	$ (41) (d)	$ 243	$ (5)
Commercial mortgage loans held for sale	49	(6)					(10)			33	(6)
Securities available for sale											
Residential mortgage-backed non-agency	1,097	22	$ (108)				(192)			819	
Commercial mortgage-backed non-agency	3									3	
Asset-backed	163	2	(18)				(23)			124	
Other	69			6			(20)			55	
Total securities available for sale	1,332	24	(126)	6			(235)			1,001	
Loans	884	23		55	(10)		(164)		(19) (d)	769	23
Equity investments	1,680	445		291	(772)			134 (e)		1,778	237
Residential mortgage servicing rights	1,078	509		897		$ 57	(231)			2,310	509
Commercial mortgage servicing rights	740	473		46		62	(208)			1,113	473
Financial derivatives	38	(6)		8			(35)			5	19
Total assets	$ 5,882	$ 1,457	$ (126)	$ 1,529	$ (816)	$ 119	$ (896)	$ 163	$ (60)	$ 7,252	$ 1,250
Liabilities											
Other borrowed funds	$ 3					$ 7	$ (6)			$ 4	
Financial derivatives	285	$ 49			$ 14		(225)			123	$ 62
Other liabilities	175	77		$ 32		876	(866)			294	66
Total liabilities	$ 463	$ 126		$ 32	$ 14	$ 883	$ (1,097)			$ 421	$ 128
Net gains (losses)		$ 1,331 (f)									$ 1,122 (g)

(Continued from previous page)

Year Ended December 31, 2021

Level 3 Instruments Only In millions	Fair Value Dec. 31, 2020	Total realized / unrealized gains or losses for the period (a) 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) (d)		$ 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) (d)	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)

(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) 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.
(e) Transfers into Level 3 were due to certain private company investments valued using significant unobservable inputs during the current period.
(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 is as follows:

Table 88: Fair Value Measurements – Recurring Quantitative Information

December 31, 2022

Level 3 Instruments Only Dollars in millions	Fair Value	Valuation Techniques	Unobservable Inputs	Range (Weighted-Average) (a)
Commercial mortgage loans held for sale	$ 33	Discounted cash flow	Spread over the benchmark curve (b)	585bps - 2,465bps (959bps)
Residential mortgage-backed non-agency securities	819	Priced by a third-party vendor using a discounted cash flow pricing model	Constant prepayment rate	1.0% - 27.9% (9.9%)
			Constant default rate	0.0% - 13.0% (4.0%)
			Loss severity	15.0% - 80.0% (46.1%)
			Spread over the benchmark curve (b)	289bps weighted-average
Asset-backed securities	124	Priced by a third-party vendor using a discounted cash flow pricing model	Constant prepayment rate	1.0% - 40.0% (7.5%)
			Constant default rate	0.0% - 7.3% (2.1%)
			Loss severity	20.0% - 100.0% (49.0%)
			Spread over the benchmark curve (b)	296bps weighted-average
Loans - Residential real estate - Uninsured	570	Consensus pricing (c)	Cumulative default rate	3.6% - 100.0% (66.2%)
			Loss severity	0.0% - 100.0% (6.2%)
			Discount rate	5.5% - 7.5% (5.9%)
Loans - Residential real estate - Government insured	76	Discounted cash flow	Loss severity	6.0% weighted-average
			Discount rate	7.9% weighted-average
Loans - Home equity - First-lien	25	Consensus pricing (c)	Cumulative default rate	3.6% - 100.0% (72.5%)
			Loss severity	0.0% - 100.0% (15.3%)
			Discount rate	5.5% - 7.5% (6.5%)
Loans - Home equity - Second-lien	98	Consensus pricing (c)	Credit and liquidity discount	0.4% - 100.0% (46.2%)
Equity investments	1,778	Multiple of adjusted earnings	Multiple of earnings	4.5x - 25.0x (9.1x)
Residential mortgage servicing rights	2,310	Discounted cash flow	Constant prepayment rate	0.0% - 34.5% (6.7%)
			Spread over the benchmark curve (b)	254bps - 1,653bps (766bps)
Commercial mortgage servicing rights	1,113	Discounted cash flow	Constant prepayment rate	3.9% - 9.8% (4.3%)
			Discount rate	7.8% - 10.1% (9.8%)
Financial derivatives - Swaps related to sales of certain Visa Class B common shares	(107)	Discounted cash flow	Estimated conversion factor of Visa Class B shares into Class A shares	160.6% 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)	(8)			
Total Level 3 assets, net of liabilities (e)	$ 6,831			

(Continued from previous page)

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 - Uninsured	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 - Government insured	109	Discounted cash flow	Loss severity	6.0% weighted-average
			Discount rate	3.5% weighted-average
Loans - Home equity - First-lien	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 - Second-lien	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			

(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 $7.3 billion and total Level 3 liabilities of $0.4 billion as of December 31, 2022 and $5.9 billion and $0.5 billion as of December 31, 2021, 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 89.

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.

Equity Investments

The majority of the amounts below for equity investments represent the carrying value of LIHTC investments held for sale calculated using a discounted cash flow model. The significant unobservable input is management's estimate of required market rate of return.

The market rate of return is based on comparison to recent LIHTC sales in the market. Significant increases (decreases) in this input would result in a significantly lower (higher) carrying value of the investments.

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 are as follows:

Table 89: Fair Value Measurements – Nonrecurring (a) (b) (c)

Year ended December 31 In millions	Fair Value		Gains (Losses)		
	2022	2021	2022	2021	2020
Assets					
Nonaccrual loans	$ 280	$ 348	$ (287)	$ (4)	$ (111)
Equity investments	135		(1)		
OREO and foreclosed assets	10	6			(2)
Long-lived assets	23	103	(15)	(45)	(27)
Total assets	$ 448	$ 457	$ (303)	$ (49)	$ (140)

(a) All Level 3 for the periods presented, except for $42 million included in Equity investments which was categorized as Level 1 as of December 31, 2022.
(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 Loans 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 are as follows:

Table 90: Fair Value Option – Fair Value and Principal Balances

In millions	December 31, 2022 Fair Value	Aggregate Unpaid Principal Balance	Difference	December 31, 2021 Fair Value	Aggregate Unpaid Principal Balance	Difference
Assets						
Residential mortgage loans held for sale						
Accruing loans less than 90 days past due	$ 609	$ 633	$ (24)	$ 1,249	$ 1,219	$ 30
Accruing loans 90 days or more past due	5	5		6	6	
Nonaccrual loans	40	49	(9)	47	57	(10)
Total	$ 654	$ 687	$ (33)	$ 1,302	$ 1,282	$ 20
Commercial mortgage loans held for sale (a)						
Accruing loans less than 90 days past due	$ 261	$ 256	$ 5	$ 575	$ 580	$ (5)
Nonaccrual loans	15	44	(29)			
Total	$ 276	$ 300	$ (24)	$ 575	$ 580	$ (5)
Loans						
Accruing loans less than 90 days past due	$ 509	$ 521	$ (12)	$ 487	$ 498	$ (11)
Accruing loans 90 days or more past due	155	167	(12)	262	278	(16)
Nonaccrual loans	646	880	(234)	752	1,028	(276)
Total	$ 1,310	$ 1,568	$ (258)	$ 1,501	$ 1,804	$ (303)
Other assets	$ 80	$ 80		$ 105	$ 107	$ (2)
Liabilities						
Other borrowed funds	$ 31	$ 32	$ (1)	$ 30	$ 30	
Other liabilities	$ 196		$ 196			

(a) There were no accruing loans 90 days or more past due within this category at December 31, 2022 or December 31, 2021.

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

Table 91: Fair Value Option – Changes in Fair Value (a)

Year ended December 31 In millions	Gains (Losses) 2022	2021	2020
Assets			
Residential mortgage loans held for sale	$ (80)	$ 152	$ 198
Commercial mortgage loans held for sale	$ 52	$ 115	$ 128
Loans	$ 42	$ 80	$ 44
Other assets	$ (16)	$ 28	$ (3)
Liabilities			
Other liabilities	$ (67)		

(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. The carrying value of Net 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 $2.5 billion and $1.3 billion at December 31, 2022 and 2021, 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, 2022 and 2021 are as follows:

Table 92: Additional Fair Value Information Related to Other Financial Instruments

In millions	Carrying Amount	Fair Value Total	Level 1	Level 2	Level 3
December 31, 2022					
Assets					
Cash and due from banks	$ 7,043	$ 7,043	$ 7,043		
Interest-earning deposits with banks	27,320	27,320		$ 27,320	
Securities held to maturity	95,183	90,279	30,748	59,377	$ 154
Net loans (excludes leases)	313,460	310,864			310,864
Other assets	6,022	6,022		6,020	2
Total assets	$ 449,028	$ 441,528	$ 37,791	$ 92,717	$ 311,020
Liabilities					
Time deposits	$ 18,470	$ 18,298		$ 18,298	
Borrowed funds	57,182	57,557		55,922	$ 1,635
Unfunded lending related commitments	694	694			694
Other liabilities	660	660		660	
Total liabilities	$ 77,006	$ 77,209		$ 74,880	$ 2,329
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

The aggregate fair values in Table 92 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 86),
- 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 93: Total Gross Derivatives (a)

	December 31, 2022			December 31, 2021		
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	$ 24,231			$ 23,345		
Cash flow hedges	40,310		$ 1	48,961	$ 15	$ 14
Foreign exchange contracts:						
Net investment hedges	1,120	$ 24		1,113		24
Total derivatives designated for hedging	$ 65,661	$ 24	$ 1	$ 73,419	$ 15	$ 38
Derivatives not used for hedging						
Derivatives used for mortgage banking activities (e):						
Interest rate contracts:						
Swaps	$ 47,908	$ 7	$ 1	$ 35,623		
Futures (f)	5,537			4,592		
Mortgage-backed commitments	4,516	85	89	9,917	$ 55	$ 31
Other	18,017	90	14	12,225	46	12
Total interest rate contracts	75,978	182	104	62,357	101	43
Derivatives used for customer-related activities:						
Interest rate contracts:						
Swaps	354,150	1,597	5,397	297,711	3,335	1,520
Futures (f)	32			907		
Mortgage-backed commitments	2,799	10	6	4,147	5	6
Other	29,071	334	321	25,718	125	72
Total interest rate contracts	386,052	1,941	5,724	328,483	3,465	1,598
Commodity contracts:						
Swaps	5,792	1,003	1,067	8,840	1,150	1,161
Other	4,488	205	202	3,128	213	212
Total commodity contracts	10,280	1,208	1,269	11,968	1,363	1,373
Foreign exchange contracts and other	30,512	366	293	27,563	199	179
Total derivatives for customer-related activities	426,844	3,515	7,286	368,014	5,027	3,150
Derivatives used for other risk management activities:						
Foreign exchange contracts and other	12,785	47	227	11,512	9	339
Total derivatives not designated for hedging	$ 515,607	$ 3,744	$ 7,617	$ 441,883	$ 5,137	$ 3,532
Total gross derivatives	$ 581,268	$ 3,768	$ 7,618	$ 515,302	$ 5,152	$ 3,570
Less: Impact of legally enforceable master netting agreements		1,523	1,523		928	928
Less: Cash collateral received/paid		714	1,571		604	1,657
Total derivatives		$ 1,531	$ 4,524		$ 3,620	$ 985

(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, 2022, we expect to reclassify net derivative losses of $1.4 billion pretax, or $1.1 billion 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, 2022. As of December 31, 2022, 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 94: 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, 2022				
Total amounts on the Consolidated Income Statement	$ 11,795	$ 2,726	$ 1,155	$ 952
Gains (losses) on fair value hedges recognized on:				
Hedged items (c)		$ (136)	$ 1,945	
Derivatives		$ 143	$ (1,976)	
Amounts related to interest settlements on derivatives		$ (2)	$ 120	
Gains (losses) on cash flow hedges (d):				
Amount of derivative gains (losses) reclassified from accumulated other comprehensive income	$ (259)	$ (1)		
Year ended December 31, 2021				
Total amounts on the Consolidated Income Statement	$ 9,007	$ 1,834	$ 361	$ 1,199
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 accumulated other comprehensive income	$ 376	$ 57		$ 61
Year ended December 31, 2020				
Total amounts on the Consolidated Income Statement	$ 8,927	$ 2,041	$ 718	$ 608
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 accumulated other comprehensive income	$ 375	$ 40		$ 6

(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 95: Hedged Items - Fair Value Hedges

	December 31, 2022		December 31, 2021	
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)	$ 2,376	$ (121)	$ 2,655	$ 23
Borrowed funds	$ 21,781	$ (1,283)	$ 24,259	$ 663

(a) Includes less than $(0.1) billion and $(0.1) billion of fair value hedge adjustments primarily related to discontinued borrowed funds hedge relationships at December 31, 2022 and 2021, respectively.
(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 the periods presented. Net gains on net investment hedge derivatives recognized in OCI were $119 million in 2022 and insignificant in both 2021 and 2020.

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 and commercial 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 and commercial 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 Residential and commercial mortgage 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 Residential and commercial mortgage 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, 2022 and 2021.

Table 96: Risk Participation Agreements

	Year ended December 31	
In billions	2022	2021
Risk participation agreements:		
Sold - notional amount	$ 8.0	$ 8.0
Maximum potential amount of exposure (a)	$ 0.1	$ 0.3

(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 97: Gains (Losses) on Derivatives Not Designated for Hedging

	Year ended December 31		
In millions	2022	2021	2020
Derivatives used for mortgage banking activities:			
Interest rate contracts (a)	$ (671)	$ (78)	$ 792
Derivatives used for customer-related activities:			
Interest rate contracts	220	149	210
Foreign exchange contracts and other	111	135	156
Gains from customer-related activities (b)	331	284	366
Derivatives used for other risk management activities:			
Foreign exchange contracts and other (b)	255	(30)	(338)
Total gains (losses) from derivatives not designated as hedging instruments	$ (85)	$ 176	$ 820

(a) Included in Residential and commercial mortgage noninterest income on our Consolidated Income Statement.
(b) Included in Capital markets and advisory and 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 98 shows the impact legally enforceable master netting agreements had on our derivative assets and derivative liabilities at December 31, 2022 and 2021. 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 98 includes OTC derivatives not settled through an exchange ("OTC derivatives") and OTC derivatives cleared through a central clearing house ("OTC cleared derivatives"). 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 98: 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, 2022							
Derivative assets							
Interest rate contracts:							
Over-the-counter cleared	$ 23			$ 23			$ 23
Over-the-counter	2,100	$ 974	$ 630	496		$ 34	462
Commodity contracts	1,208	335	2	871			871
Foreign exchange and other contracts	437	214	82	141			141
Total derivative assets	$ 3,768	$ 1,523	$ 714	$ 1,531	(a)	$ 34	$ 1,497
Derivative liabilities							
Interest rate contracts:							
Over-the-counter cleared	$ 28			$ 28			$ 28
Over-the-counter	5,801	$ 625	$ 1,041	4,135		$ 78	4,057
Commodity contracts	1,269	679	520	70		4	66
Foreign exchange and other contracts	520	219	10	291			291
Total derivative liabilities	$ 7,618	$ 1,523	$ 1,571	$ 4,524	(b)	$ 82	$ 4,442
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

(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, 2022, cash and debt securities (primarily agency mortgage-backed securities) totaling $1.5 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 instruments with credit-risk-related contingent features, the associated collateral posted in the normal course of business and the maximum amount of collateral we would be required to post if the credit-risk-related contingent features underlying these agreements had been triggered on December 31, 2022 and 2021.

Table 99: Credit-Risk Contingent Features

	Year ended December 31	
In billions	2022	2021
Net derivative liabilities with credit-risk contingent features	$ 5.8	$ 2.4
Collateral posted	1.7	1.8
Maximum additional amount of collateral exposure	$ 4.1	$ 0.6

NOTE 17 EMPLOYEE BENEFIT PLANS

Pension and Postretirement Plans

We have a noncontributory, qualified defined benefit pension plan covering eligible employees. Benefits are determined using a cash balance formula where earnings credits are a percentage of eligible compensation. Earnings credit percentages for those employees who were plan participants on December 31, 2009 are frozen at the level earned to that point. Earnings credits for all employees who became participants on or after January 1, 2010 are a flat 3% of eligible compensation. All participants as of December 31, 2009 earn a minimum rate on their cash balances; new participants on or after January 1, 2010 earn interest credits on their cash balances based on 30-year Treasury securities. New participants on or after January 1, 2010 are not subject to the minimum rate. The plan provides for a minimum annual earnings credit amount of $2,000, subject to eligibility criteria. Pension contributions to the plan are typically based on an actuarially determined amount necessary to fund total benefits payable to plan participants. Assets of the qualified pension plan are held in a separate Trust.

We also maintain nonqualified supplemental retirement plans for certain employees and provide certain health care and life insurance benefits for qualifying retired employees (postretirement benefits) through various plans. PNC reserves the right to terminate or make changes to these plans at any time. The nonqualified pension plan is unfunded. Contributions from PNC, and participant contributions in the case of the postretirement benefit plans, cover all benefits paid under the nonqualified pension plan and postretirement benefit plans. The postretirement plan provides benefits to certain retirees that are at least actuarially equivalent to those provided by Medicare Part D and accordingly, we receive a federal subsidy. PNC has established a VEBA to partially fund postretirement medical and life insurance benefit obligations.

We use a measurement date of December 31 for plan assets and benefit obligations.

A reconciliation of the changes in the projected benefit obligation for qualified pension, nonqualified pension and postretirement benefit plans as well as the change in plan assets for the qualified pension and postretirement benefit plans follows:

Table 100: Reconciliation of Changes in Projected Benefit Obligation and Change in Plan Assets

	Qualified Pension (a)		Nonqualified Pension		Postretirement Benefits	
In millions	2022	2021	2022	2021	2022	2021
Accumulated benefit obligation at December 31	$ 4,517	$ 5,370	$ 219	$ 272		
Projected benefit obligation at January 1	$ 5,423	$ 5,174	$ 280	$ 263	$ 326	$ 337
Service cost	142	133	3	4	4	4
Interest cost	156	139	7	6	9	8
Amendments		(4)				
Actuarial (gains)/losses and changes in assumptions (a)	(833)	(88)	(44)	(4)	(57)	(11)
Participant contributions					2	3
Federal Medicare subsidy on benefits paid					1	1
Benefits paid	(345)	(320)	(24)	(21)	(25)	(25)
Projected benefit obligation from BBVA acquisition		389		32		9
Projected benefit obligation at December 31	$ 4,543	$ 5,423	$ 222	$ 280	$ 260	$ 326
Fair value of plan assets at January 1	$ 6,788	$ 6,073			$ 263	$ 262
Actual return on plan assets	(1,043)	670			(21)	2
Employer contribution			$ 24	$ 21	22	20
Participant contributions					2	3
Federal Medicare subsidy on benefits paid					1	1
Benefits paid	(345)	(320)	(24)	(21)	(25)	(25)
Fair value of plan assets from BBVA acquisition		365				
Fair value of plan assets at December 31	$ 5,400	$ 6,788			$ 242	$ 263
Funded status	$ 857	$ 1,365	$ (222)	$ (280)	$ (18)	$ (63)
Amounts recognized on the consolidated balance sheet						
Noncurrent asset	$ 857	$ 1,365			$ 10	
Current liability			$ (24)	$ (25)	(3)	$ (2)
Noncurrent liability			(198)	(255)	(25)	(61)
Net amount recognized on the consolidated balance sheet	$ 857	$ 1,365	$ (222)	$ (280)	$ (18)	$ (63)
Amounts recognized in AOCI consist of:						
Prior service cost (credit)	$ 14	$ 17			$ 1	$ 1
Net actuarial loss (gain)	322	(186)	$ 31	$ 80	(32)	(2)
Amount of loss (gain) recognized in AOCI	$ 336	$ (169)	$ 31	$ 80	$ (31)	$ (1)

(a) The actuarial (gains)/losses and changes in assumptions in 2022 and 2021 were primarily related to a change in the discount rate used to measure the projected benefit obligation.

PNC Pension Plan Assets

The long-term investment strategy for pension plan assets in our qualified pension plan (the Plan) is to:

- Meet present and future benefit obligations to all participants and beneficiaries;
- Cover reasonable expenses incurred to provide such benefits, including expenses incurred in the administration of the Trust and the Plan;
- Provide sufficient liquidity to meet benefit and expense payment requirements on a timely basis; and
- Provide a total return that, over the long term, maximizes the ratio of trust assets to liabilities by maximizing investment return, at an appropriate level of risk.

The Plan's named investment fiduciary has the ability to make short to intermediate term asset allocation shifts under the dynamic asset allocation strategy based on factors such as the Plan's funded status, the named investment fiduciary's view of return on equities relative to long term expectations, the named investment fiduciary's view on the direction of interest rates and credit spreads, and other relevant financial or economic factors which would be expected to impact the ability of the Trust to meet its obligation to participants and beneficiaries. Accordingly, the allowable asset allocation ranges have been updated to incorporate the flexibility required by the dynamic allocation policy.

The asset strategy allocations for the Plan at the end of 2022 and 2021, and the target allocation range at the end of 2022, by asset category, are as follows.

Table 101: Asset Strategy Allocations

	Target Allocation Range	Percentage of Plan Assets by Strategy at December 31	
		2022	2021
Asset Category			
Domestic Equity	15 – 40%	21 %	20 %
International Equity	10 – 25%	17 %	17 %
Private Equity	0 – 15%	11 %	12 %
Total Equity	30 – 70%	49 %	49 %
Domestic Fixed Income	10 – 40%	30 %	28 %
High Yield Fixed Income	0 – 25%	9 %	7 %
Total Fixed Income	10 – 65%	39 %	35 %
Real estate	0 – 10%	6 %	5 %
Other	0 – 20%	6 %	11 %
Total	100%	100 %	100 %

The asset category represents the allocation of Plan assets in accordance with the investment objective of each of the Plan's investment managers. Certain domestic equity investment managers utilize derivatives and fixed income securities as described in their Investment Management Agreements to achieve their investment objective under the Investment Policy Statement. Other investment managers may invest in eligible securities outside of their assigned asset category to meet their investment objectives. The actual percentage of the fair value of total Plan assets held as of December 31, 2022 for equity securities, fixed income securities, real estate and all other assets are 63%, 24%, 6% and 7%, respectively.

We believe that, over the long term, asset allocation is the single greatest determinant of risk. Asset allocation will deviate from the target percentages due to market movement, cash flows, investment manager performance and implementation of shifts under the dynamic asset allocation policy. Material deviations from the asset allocation targets can alter the expected return and risk of the Trust. However, frequent rebalancing of the asset allocation targets may result in significant transaction costs, which can impair the Trust's ability to meet its investment objective. Accordingly, the Trust portfolio is periodically rebalanced to maintain asset allocation within the target ranges described above.

In addition to being diversified across asset classes, the Trust is diversified within each asset class. Secondary diversification provides a reasonable basis for the expectation that no single security or class of securities will have a disproportionate impact on the total risk and return of the Trust.

Where investment strategies permit the use of derivatives and/or currency management, language is incorporated in the managers' guidelines to define allowable and prohibited transactions and/or strategies. Derivatives are typically employed by investment managers to modify risk/return characteristics of their portfolio(s), implement asset allocation changes in a cost effective manner, or reduce transaction costs. Under the managers' investment guidelines, derivatives may not be used solely for speculation or leverage. Derivatives are to be used only in circumstances where they offer the most efficient economic means of improving the risk/reward profile of the portfolio.

Fair Value Measurements

As further described in Note 15 Fair Value, GAAP establishes the framework for measuring fair value, including a hierarchy used to classify the inputs used in measuring fair value.

A description of the valuation methodologies used for assets measured at fair value at both December 31, 2022 and 2021 follows:

Table 102: Pension Plan Valuation Methodologies

Asset	Valuation Methodology
Money market funds	• Valued at the NAV of the shares held by the pension plan at year end.
U.S. government and agency securities Corporate debt Common stock	• Valued at the closing price reported on the active market on which the individual securities are traded. • If quoted market prices are not available for the specific security, then fair values are estimated by using pricing models or quoted prices of securities with similar characteristics. Such securities are generally classified within Level 2 of the valuation hierarchy but may be a Level 3 depending on the level of liquidity and activity in the market for the security.
Mutual funds	• Valued based on third-party pricing of the fund that is not actively traded.
Other investments Derivative financial instruments Group annuity contracts Preferred stock	• Derivative financial instruments - recorded at estimated fair value as determined by third-party appraisals and pricing models. • Group annuity contracts - measured at fair value by discounting the related cash flows based on current yields of similar instruments with comparable durations considering the creditworthiness of the issuer. • Preferred stock - valued at the closing price reported on an active market on which the securities are traded.
Investments measured at NAV Collective trust fund investments Limited partnerships	• Collective trust fund investments - valued based upon the units of such collective trust fund held by the Plan at year end multiplied by the respective unit value. The unit value of the collective trust fund is based upon significant observable inputs, although it is not based upon quoted prices in an active market. The underlying investments of the collective trust funds consist primarily of equity securities, debt obligations, short-term investments, and other marketable securities. Due to the nature of these securities, there are no unfunded commitments or redemption restrictions. • Limited partnerships - valued by investment managers based on recent financial information used to estimate fair value. The unit value of limited partnerships is based upon significant observable inputs, although it is not based upon quoted marked prices in an active market.

These methods may result in fair value calculations that may not be indicative of net realizable values or future fair values. Furthermore, while the pension plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following table sets forth by level, within the fair value hierarchy, the Plan's assets at fair value as of December 31, 2022 and 2021.

Table 103: Pension Plan Assets - Fair Value Hierarchy

	December 31, 2022				December 31, 2021			
In millions	Level 1	Level 2	Level 3	Total Fair Value	Level 1	Level 2	Level 3	Total Fair Value
Interest bearing cash	$ 51			$ 51		$ 11		$ 11
Money market funds	333			333	$ 725			725
U.S. government and agency securities	454	$ 136		590	583	124		707
Corporate debt		699	$ 2	701		962	$ 4	966
Common stock	605			605	739		1	740
Mutual funds		150		150		278		278
Other	1	1		2		148		148
Investments measured at NAV (a)				2,968				3,213
Total	$ 1,444	$ 986	$ 2	$ 5,400	$ 2,047	$ 1,523	$ 5	$ 6,788

(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.

The following table provides information regarding our estimated future cash flows related to our various plans.

Table 104: Estimated Cash Flows

	Pension Plans		Postretirement Benefits
In millions	Qualified Pension	Nonqualified Pension	
Estimated 2023 employer contributions		$ 25	$ 23
Estimated future benefit payments			
2023	$ 326	$ 25	$ 23
2024	$ 336	$ 24	$ 24
2025	$ 353	$ 24	$ 23
2026	$ 356	$ 23	$ 23
2027	$ 337	$ 22	$ 23
2028-2032	$ 1,691	$ 96	$ 106

The qualified pension plan contributions are deposited into the Trust, and the qualified pension plan benefit payments are paid from the Trust. We do not expect to be required to make a contribution to the qualified plan for 2023 based on the funding calculations under the Pension Protection Act of 2006. For the other plans, total contributions and the benefit payments are the same and represent expected benefit amounts, which are paid from general assets. Postretirement benefits are net of participant contributions. Estimated cash flows reflect the partial funding of postretirement medical and life insurance obligations in the VEBA.

The components of net periodic benefit cost/(income) and other amounts recognized in OCI were as follows:

Table 105: Components of Net Periodic Benefit Cost (a)

	Qualified Pension Plan			Nonqualified Pension Plan			Postretirement Benefits		
Year ended December 31 – in millions	2022	2021	2020	2022	2021	2020	2022	2021	2020
Net periodic cost consists of:									
Service cost	$ 142	$ 133	$ 122	$ 3	$ 4	$ 3	$ 4	$ 4	$ 4
Interest cost	156	139	160	7	6	8	9	8	11
Expected return on plan assets	(298)	(273)	(302)				(6)	(6)	(6)
Amortization of prior service cost/(credit)	3	4	4						
Amortization of actuarial (gain)/loss				5	6	5			
Net periodic cost (benefit)	$ 3	$ 3	$ (16)	$ 15	$ 16	$ 16	$ 7	$ 6	$ 9
Other changes in plan assets and benefit obligations recognized in OCI:									
Current year prior service cost/(credit)		(4)							
Amortization of prior service (cost)/credit	(3)	(4)	(4)						
Current year actuarial loss/(gain)	508	(485)	(112)	(44)	(4)	17	(30)	(7)	3
Amortization of actuarial gain/(loss)				(5)	(6)	(5)			
Total recognized in OCI	$ 505	$ (493)	$ (116)	$ (49)	$ (10)	$ 12	$ (30)	$ (7)	$ 3
Total amounts recognized in net periodic cost and OCI	$ 508	$ (490)	$ (132)	$ (34)	$ 6	$ 28	$ (23)	$ (1)	$ 12

(a) The service cost component is included in Personnel expense on the Consolidated Income Statement. All other components are included in Other noninterest expense on the Consolidated Income Statement.

The weighted-average assumptions used (as of the beginning of each year) to determine the net periodic costs shown in Table 105 were as follows:

Table 106: Net Periodic Costs - Assumptions

	Net Periodic Cost Determination		
As of January 1	2022	2021	2020
Discount rate (a)			
Qualified pension	2.90 %	2.60 %	3.30 %
Nonqualified pension	2.65 %	2.15 %	3.05 %
Postretirement benefits	2.80 %	2.40 %	3.20 %
Rate of compensation increase (average) (b)	4.25 %	4.25 %	4.25 %
Interest crediting rate (average)			
Qualified Pension	3.70 %	3.70 %	3.85 %
Nonqualified pension	4.00 %	4.00 %	4.15 %
Postretirement benefits	1.65 %	1.30 %	2.05 %
Assumed health care cost trend rate (c)			
Initial trend	6.00 %	6.00 %	6.25 %
Ultimate trend	4.50 %	5.00 %	5.00 %
Year ultimate trend reached	2028	2025	2025
Expected long-term return on plan assets (b) (d)	4.50 %	4.40 %	5.50 %

(a) The 2021 discount rate for each plan is a blended rate that is inclusive of the BBVA plans acquired during the year.
(b) Rate disclosed is for the qualified pension plan.
(c) Rate is applicable only to the postretirement benefit plans.
(d) The 2021 rate is a blended rate that is inclusive of the BBVA plan assets acquired during the year.

The weighted-average assumptions used (as of the end of each year) to determine year end obligations for pension and postretirement benefits were as follows:

Table 107: Other Pension Assumptions

Year ended December 31	2022	2021
Discount rate		
Qualified pension	5.55 %	2.90 %
Nonqualified pension	5.45 %	2.65 %
Postretirement benefits	5.50 %	2.80 %
Rate of compensation increase (average) (a)	4.25 %	4.25 %
Interest crediting rate (average)		
Qualified pension	4.65 %	3.70 %
Nonqualified pension	4.80 %	4.00 %
Postretirement benefits	4.30 %	1.65 %
Assumed health care cost trend rate (b)		
Initial trend	6.00 %	6.00 %
Ultimate trend	4.50 %	4.50 %
Year ultimate trend reached	2029	2025

(a) Rate disclosed is for the qualified pension plan.
(b) Rate is applicable only to the postretirement benefit plans.

The discount rates are determined independently for each plan by comparing the expected future benefits that will be paid under each plan with yields available on high quality corporate bonds of similar duration. For this analysis, 10% of bonds with the highest yields and 40% with the lowest yields were removed from the bond universe.

With all other assumptions held constant, a 0.50% decline in the discount rate would have resulted in an immaterial change in net periodic benefit cost in 2022 and to be recognized in 2023 for each of the qualified pension, nonqualified pension and postretirement benefit plans.

The expected return on plan assets is a long-term assumption established by considering historical and anticipated returns of the asset classes invested in by the pension plan and the allocation strategy currently in place among those classes. For purposes of setting and reviewing this assumption, "long-term" refers to the period over which the plan's projected benefit obligations will be disbursed. We review this assumption at each measurement date and adjust it if warranted. Our selection process references certain historical data and the current environment, but primarily utilizes qualitative judgment regarding future return expectations. We also examine the assumption used by other companies with similar pension investment strategies. Taking into account all of these factors, the expected long-term return on plan assets for determining net periodic pension cost for 2022 was 4.50%. We are increasing our expected long-term return on assets to 6.20% for determining pension cost for 2023. This decision was made after considering the views of both internal and external capital market advisors, particularly with regard to the effects of the recent economic environment on long-term prospective equity and fixed income returns.

Defined Contribution Plans

The ISP is a qualified defined contribution plan that covers all of our eligible employees. Newly-hired full time employees and part-time employees who are eligible to participate in the ISP are automatically enrolled in the ISP with a deferral rate equal to 4% of eligible compensation in the absence of an affirmative election otherwise. Employee benefits expense related to the ISP was $175 million in 2022, $168 million in 2021 and $147 million in 2020, representing cash contributed to the ISP by PNC.

The ISP is a 401(k) Plan and includes an employee stock ownership feature. Employee contributions are invested in a number of investment options, including pre-mixed portfolios and individual core funds, available under the ISP at the direction of the employee.

NOTE 18 STOCK BASED COMPENSATION PLANS

We have long-term incentive award plans (Incentive Plans) that provide for the granting of incentive stock options, nonqualified stock options, stock appreciation rights, performance share units, restricted share units, other share-based awards and dollar-denominated awards to executives and, other than incentive stock options, to non-employee directors. Certain Incentive Plan awards may be paid in stock, cash or a combination of stock and cash. We typically grant a substantial portion of our stock-based compensation awards during the first quarter of each year.

Performance Share Unit Awards and Restricted Share Unit Awards

PNC grants share unit awards that are based on performance, service and certain metrics tied to market conditions. The fair value of nonvested performance share unit awards and restricted share unit awards is initially determined based on prices not less than the market value of our common stock on the date of grant with a reduction for estimated forfeitures. Fair value is determined based on a Monte Carlo model, with subsequent remeasurement based on the achievement of one or more performance goals. Additionally, certain performance share unit awards could require subsequent adjustment due to certain discretionary risk review triggers.

The weighted-average grant date fair value of performance share unit awards and restricted share unit awards granted in 2022, 2021 and 2020 was $198.28, $161.04 and $150.23 per share, respectively. The total intrinsic value of performance share unit awards and restricted share unit awards vested during 2022, 2021 and 2020 was approximately $322 million, $207 million and $213 million, respectively. We recognize compensation expense for such awards ratably over the corresponding vesting and/or performance periods for each type of program.

A rollforward of the nonvested performance share unit and restricted share unit awards follows:

Table 108: Nonvested Performance Share Unit Awards and Restricted Share Unit Awards - Rollforward

Shares in thousands	Nonvested Performance Share Units	Weighted-Average Grant Date Fair Value	Nonvested Restricted Share Units	Weighted-Average Grant Date Fair Value
December 31, 2021	599	$ 133.59	3,582	$ 142.94
Granted (a) (b)	332	$ 173.25	1,214	$ 205.11
Vested/Released (a)	(246)	$ 110.14	(1,328)	$ 122.88
Forfeitures			(120)	$ 172.63
December 31, 2022	685	$ 161.20	3,348	$ 172.40

(a) Includes adjustments for achieving specific performance goals for performance share unit awards granted in prior periods.
(b) Includes 170 performance share units with market conditions.

In Table 108, the units and related weighted-average grant date fair value of the performance unit share awards exclude the effect of dividends on the underlying shares, as those dividends will be paid in cash if and when the underlying shares are issued to the participants.

NOTE 19 INCOME TAXES

The components of income tax expense from continuing operations are as follows:

Table 109: Components of Income Tax Expense

Year ended December 31 In millions	2022	2021	2020
Current			
Federal	$ 782	$ 894	$ 669
State	227	191	158
Total current	$ 1,009	$ 1,085	$ 827
Deferred			
Federal	307	123	(373)
State	44	55	(28)
Total deferred	$ 351	$ 178	$ (401)
Total	$ 1,360	$ 1,263	$ 426

Significant components of deferred tax assets and liabilities are as follows:

Table 110: Deferred Tax Assets and Liabilities

December 31 – in millions	2022	2021
Deferred tax assets		
Net unrealized losses on securities and financial instruments	$ 3,107	
Allowance for loan and lease losses	1,152	$ 1,170
Lease obligations	548	563
Compensation and benefits	369	290
Allowance for unfunded lending related commitments	170	161
Loss and credit carryforward	98	140
Accrued expenses	78	151
Other	252	311
Total gross deferred tax assets	5,774	2,786
Valuation allowance	(27)	(33)
Total deferred tax assets	5,747	2,753
Deferred tax liabilities		
Leasing	1,034	1,023
Fixed assets	589	704
Right of Use Assets	472	488
Mortgage servicing rights	325	89
Goodwill and intangibles	270	278
Net unrealized gains on securities and financial instruments		120
Other	405	254
Total deferred tax liabilities	3,095	2,956
Net deferred tax asset (liability)	$ 2,652	$ (203)

A reconciliation between the statutory and effective tax rates from continuing operations follows:

Table 111: Reconciliation of Statutory and Effective Tax Rates

Year ended December 31	2022	2021	2020
Statutory tax rate	21.0 %	21.0 %	21.0 %
Increases (decreases) resulting from:			
State taxes net of federal benefit	2.7	2.6	2.0
Tax-exempt interest	(1.2)	(0.9)	(1.7)
Life insurance	(0.8)	(0.8)	(1.6)
Tax credits	(3.2)	(4.4)	(6.0)
Unrecognized tax benefits	0.1	0.3	(1.6)
Subsidiary liquidation			(1.2)
Other	(0.4)	0.3	1.5
Effective tax rate	18.2 %	18.1 %	12.4 %

The net operating loss carryforwards at December 31, 2022 and 2021 follow:

Table 112: Net Operating Loss Carryforwards

Dollars in millions	December 31, 2022	December 31, 2021	Expiration
Net Operating Loss Carryforwards:			
Federal	$ 45	$ 166	2030-2032
State	$ 698	$ 872	2023-2039

The majority of the tax credit carryforwards expire in 2023-2040 and were $45 million at December 31, 2022 and $51 million at December 31, 2021. Some federal and state net operating loss and credit carryforwards are from acquired entities and utilization is subject to various statutory limitations. We anticipate that we will be able to fully utilize our carryforwards for federal tax purposes. However, we have recorded an insignificant valuation allowance against our carryforwards for state tax purposes as of December 31, 2022.

Retained earnings included $0.1 billion at both December 31, 2022 and 2021 in allocations for bad debt deductions of former thrift subsidiaries for which no income tax has been provided. Under current law, if certain subsidiaries use these bad debt reserves for purposes other than to absorb bad debt losses, they will be subject to Federal income tax at the current corporate tax rate.

A reconciliation of the beginning and ending balance of unrecognized tax benefits is as follows:

Table 113: Change in Unrecognized Tax Benefits

In millions	2022	2021	2020
Balance of gross unrecognized tax benefits at January 1	$ 275	$ 265	$ 130
Increases:			
Positions taken during a current period			265
Acquired unrecognized tax benefits		8	
Positions taken during a prior period	46	7	
Decreases:			
Positions taken during a prior period		(2)	
Settlements with taxing authorities	(3)	(3)	(130)
Balance of gross unrecognized tax benefits at December 31	$ 318	$ 275	$ 265
Favorable impact if recognized	$ 258	$ 217	$ 209

We do not expect that the balance of unrecognized tax benefits will significantly increase or decrease in the next twelve months.

We are subject to U.S. federal income tax as well as income tax in most states and some foreign jurisdictions. Table 114 summarizes the status of significant IRS examinations.

Table 114: IRS Tax Examination Status

	Year(s)		Status at December 31, 2022
	PNC Financial Services Group, Inc.	BBVA USA Bancshares, Inc.	
Federal	2020-2021	2018	Under Exam

In addition, we are under continuous examinations by various state taxing authorities. With few exceptions, we are no longer subject to state and local and foreign income tax examinations by taxing authorities for periods before 2014. For all open audits, any potential adjustments have been considered in establishing our unrecognized tax benefits as of December 31, 2022.

Our policy is to classify interest and penalties associated with income taxes as income tax expense. For 2022 and 2021, the amount of gross interest and penalties was insignificant. At December 31, 2022 and 2021, the related amounts of accrued interest and penalties were also insignificant.

NOTE 20 REGULATORY MATTERS

We are subject to the regulations of certain federal, state and foreign agencies and undergo examinations by such regulatory authorities.

The ability to undertake new business initiatives (including acquisitions), the access to and cost of funding for new business initiatives, the ability to pay dividends, the ability to repurchase shares or other capital instruments, the level of deposit insurance costs, and the level and nature of regulatory oversight depend, in large part, on a financial institution’s capital strength.

As of January 1, 2020, the 2019 Tailoring Rules became effective for PNC. The most significant changes involve the election to exclude specific AOCI items from CET1 capital and higher thresholds used to calculate CET1 capital deductions.

On March 27, 2020, the regulatory agencies issued an interim final rule permitting banking organizations to delay the estimated impact on regulatory capital stemming from implementing the CECL standard. PNC elected to delay the estimated impact of CECL on CET1 capital through December 31, 2021, followed by a three-year transition period. CECL’s estimated impact on CET1 capital is defined as the change in retained earnings at adoption plus or minus 25% of the change in CECL ACL at the balance sheet date, excluding the allowance for PCD loans, compared to CECL ACL at adoption. Effective for the first quarter of 2022, PNC is now in the three-year transition period, and the full impact of the CECL standard is being phased-in to regulatory capital through December 31, 2024.

At December 31, 2022 and 2021, PNC and PNC Bank, our domestic banking subsidiary, were both considered “well capitalized,” based on applicable U.S. regulatory capital ratio requirements.

The following table sets forth the Basel III regulatory capital ratios at December 31, 2022 and 2021, for PNC and PNC Bank:

Table 115: Basel Regulatory Capital (a)

December 31 Dollars in millions	Amount 2022	Amount 2021	Ratios 2022	Ratios 2021	"Well Capitalized" Requirements
Risk-based capital					
Common equity Tier 1					
PNC	$ 39,685	$ 40,066	9.1 %	10.3 %	N/A
PNC Bank	$ 43,658	$ 42,024	10.2 %	11.1 %	6.5 %
Tier 1					
PNC	$ 45,431	$ 45,075	10.4 %	11.6 %	6.0 %
PNC Bank	$ 43,658	$ 42,024	10.2 %	11.1 %	8.0 %
Total					
PNC	$ 53,440	$ 52,451	12.3 %	13.5 %	10.0 %
PNC Bank	$ 50,666	$ 49,083	11.8 %	12.9 %	10.0 %
Leverage					
PNC	$ 45,431	$ 45,075	8.2 %	8.2 %	N/A
PNC Bank	$ 43,658	$ 42,024	8.0 %	7.8 %	5.0 %

(a) Calculated using the regulatory capital methodology applicable to us during both 2022 and 2021.

The principal source of parent company cash flow is the dividends it receives from PNC Bank, which may be impacted by the following:

- Capital needs,
- Laws and regulations,
- Corporate policies,
- Contractual restrictions, and
- Other factors.

Also, there are statutory and regulatory limitations on the ability of national banks to pay dividends or make other capital distributions. The amount available for dividend payments to the parent company by PNC Bank without prior regulatory approval was approximately $3.5 billion at December 31, 2022.

Under federal law, a bank subsidiary generally may not extend credit to, or engage in other types of covered transactions (including the purchase of assets) with, the parent company or its non-bank subsidiaries on terms and under circumstances that are not substantially the same as comparable transactions with nonaffiliates. A bank subsidiary may not extend credit to, or engage in a covered transaction with, the parent company or a non-bank subsidiary if the aggregate amount of the bank's extensions of credit and other covered transactions with the parent company or non-bank subsidiary exceeds 10% of the capital stock and surplus of such bank subsidiary or the aggregate amount of the bank's extensions of credit and other covered transactions with the parent company and all non-bank subsidiaries exceeds 20% of the capital stock and surplus of such bank subsidiary. Such extensions of credit, with limited exceptions, must be at least fully collateralized in accordance with specified collateralization thresholds, with the thresholds varying based on the type of assets serving as collateral. In certain circumstances, federal regulatory authorities may impose more restrictive limitations.

The Federal Reserve is authorized to establish reserve requirements for certain types of deposits and other liabilities of depository institutions. Effective March 26, 2020, the reserve requirement ratios were reduced to zero. At December 31, 2022, the balance outstanding at the Federal Reserve Bank was $26.9 billion. This amount is included in Interest-earning deposits with banks on our Consolidated Balance Sheet.

NOTE 21 LEGAL PROCEEDINGS

We establish accruals for legal proceedings, including litigation and regulatory and governmental investigations and inquiries, when information related to the loss contingencies represented by those matters indicates both that a loss is probable and that the amount of loss can be reasonably estimated. Any such accruals are adjusted thereafter as appropriate to reflect changed circumstances. When we are able to do so, we also determine estimates of reasonably possible losses or ranges of reasonably possible losses, whether in excess of any related accrued liability or where there is no accrued liability, for disclosed legal proceedings ("Disclosed Matters," which are those matters disclosed in this Note 21). For Disclosed Matters where we are able to estimate such possible losses or ranges of possible losses, as of December 31, 2022, we estimate that it is reasonably possible that we could incur losses in excess of related accrued liabilities, if any, in an aggregate amount less than $300 million. The estimates included in this amount are based on our analysis of currently available information and are subject to significant judgment and a variety of assumptions and uncertainties. As new information is obtained, we may change our estimates. Due to the inherent subjectivity of the assessments and unpredictability of outcomes of legal proceedings, any amounts accrued or included in this aggregate amount may not represent the ultimate loss to us from the legal proceedings in question. Thus, our exposure and ultimate losses may be higher, and possibly significantly so, than the amounts accrued or this aggregate amount.

In our experience, legal proceedings are inherently unpredictable. One or more of the following factors frequently contribute to this inherent unpredictability: the proceeding is in its early stages; the damages sought are unspecified, unsupported or uncertain; it is unclear whether a case brought as a class action will be allowed to proceed on that basis or, if permitted to proceed as a class action, how the class will be defined; the other party is seeking relief other than or in addition to compensatory damages (including, in the case of regulatory and governmental investigations and inquiries, the possibility of fines and penalties); the matter presents meaningful legal uncertainties, including novel issues of law; we have not engaged in meaningful settlement discussions; discovery has not started or is not complete; there are significant facts in dispute; the possible outcomes may not be amenable to the use of statistical or quantitative analytical tools; predicting possible outcomes depends on making assumptions about future decisions of courts or regulatory bodies or the behavior of other parties; and there are a large number of parties named as defendants (including where it is uncertain how damages or liability, if any, will be shared among multiple defendants). Generally, the less progress that has been made in the proceedings or the broader the range of potential results, the harder it is for us to estimate losses or ranges of losses that it is reasonably possible we could incur.

As a result of these types of factors, we are unable, at this time, to estimate the losses that are reasonably possible to be incurred or ranges of such losses with respect to some of the matters disclosed, and the aggregate estimated amount provided above does not include an estimate for every Disclosed Matter. Therefore, as the estimated aggregate amount disclosed above does not include all of the Disclosed Matters, the amount disclosed above does not represent our maximum reasonably possible loss exposure for all of the Disclosed Matters. The estimated aggregate amount also does not reflect any of our exposure to matters not so disclosed, as discussed below under "Other."

We include in some of the descriptions of individual Disclosed Matters certain quantitative information related to the plaintiff's claim against us as alleged in the plaintiff's pleadings or other public filings or otherwise publicly available information. While information of this type may provide insight into the potential magnitude of a matter, it does not necessarily represent our estimate of reasonably possible loss or our judgment as to any currently appropriate accrual.

Some of our exposure in Disclosed Matters may be offset by applicable insurance coverage. We do not consider the possible availability of insurance coverage in determining the amounts of any accruals (although we record the amount of related insurance recoveries that are deemed probable up to the amount of the accrual) or in determining any estimates of possible losses or ranges of possible losses.

Interchange Litigation

Beginning in June 2005, a series of antitrust lawsuits were filed against Visa®, Mastercard®, and several major financial institutions, including cases naming National City (since merged into The PNC Financial Services Group, Inc.) and its subsidiary, National City Bank of Kentucky (since merged into National City Bank, which, in turn, was merged into PNC Bank). The plaintiffs in these cases are merchants operating commercial businesses throughout the U.S., as well as trade associations. Some of these cases (including those naming National City entities) were brought as class actions on behalf of all persons or business entities that have accepted Visa or Mastercard. The cases have been consolidated for pre-trial proceedings in the U.S. District Court for the Eastern District of New York under the caption *In re Payment Card Interchange Fee and Merchant-Discount Antitrust Litigation* (Master File No. 1:05-md-1720- MKB-JO).

In July 2012, the parties entered into a memorandum of understanding with the class plaintiffs and an agreement in principle with certain individual plaintiffs with respect to a settlement of these cases, under which the defendants agreed to pay approximately $6.6 billion collectively to the class and individual settling plaintiffs and agreed to changes in the terms applicable to their respective card networks (including an eight-month reduction in default credit interchange rates). The parties entered into a definitive agreement with respect to this settlement in October 2012. The court granted final approval of the settlement in December 2013. Several objectors appealed the order of approval to the U.S. Court of Appeals for the Second Circuit, which issued an order in June 2016, reversing approval of the settlement and remanding for further proceedings. In November 2016, the plaintiffs filed a petition for a writ of certiorari with the U.S. Supreme Court to challenge the court of appeal's decision. The Supreme Court denied the petition in March 2017.

As a result of the reversal of the approval of the settlement, the class actions have resumed in the district court. In November 2016, the district court appointed separate interim class counsel for a proposed class seeking damages and a proposed class seeking equitable (injunctive) relief. In February 2017, each of these counsel filed a proposed amended and supplemental complaint on behalf of its respective proposed class. These complaints make similar allegations, including that the defendants conspired to monopolize and to fix the prices for general purpose card network services, that the restructuring of Visa and Mastercard, each of which included an initial public offering, violated the antitrust laws, and that the defendants otherwise imposed unreasonable restraints on trade, resulting in the payment of inflated interchange fees and other fees, which also violated the antitrust laws. In their complaints, collectively the plaintiffs seek, among other things, injunctive relief, unspecified damages (trebled under the antitrust laws) and attorneys' fees. PNC is named as a defendant in the complaint seeking damages but is not named as a defendant in the complaint that seeks equitable relief.

In September 2017, the magistrate judge at the district court granted in part and denied in part the plaintiffs' motions to file their proposed amended complaints. The dispute over amendment arose in part from the decision in *United States v. American Express, Co.,* 838 F.3d 179 (2d Cir. 2016), in which the court held that the relevant market in a similar complaint against American Express is "two-sided," *i.e*., requires consideration of effects on consumers as well as merchants. In June 2018, the U.S. Supreme Court affirmed (under the caption *Ohio v. American Express Co.*) the court of appeals decision. Previously, the plaintiffs in this litigation had alleged a one-sided market, and, as a result of the court's decision in *American Express*, they sought leave to add claims based on a two-sided market. The order allowed the complaint to be amended to include allegations pertaining to a two-sided market only to the extent those claims are not time-barred, but held that the two-sided market allegations do not relate back to the time of the original complaint and are not subject to tolling. In October 2017, the plaintiffs appealed this order to the presiding district court judge. In August 2018, the judge overruled this decision, finding that the two-sided market allegations do relate back.

In September 2018, the relevant parties entered an amended definitive agreement to resolve the claims of the class seeking damages. In this amended settlement agreement, the parties agreed, among other things, to the following terms:

- An additional settlement payment from all defendants of $900 million, with Visa's share of the additional settlement payment being $600 million. The additional settlement payment will be added to the approximately $5.3 billion previously paid by the defendants pursuant to the original 2012 settlement agreement.
- Up to $700 million may be returned to the defendants (with up to $467 million to Visa) if more than 15% of class members (by payment volume) opt out of the class. As more than 15% of class members opted out of the class, $700 million has been returned to the defendants ($467 million to Visa).

This amended settlement agreement is subject to court approval. Following preliminary approval in January 2019, and after class notice, the submission of opt-outs, and the filing of objections, the district court granted final approval of the settlement in December 2019. Several objectors have appealed the district court's order granting final approval to the U.S. Court of Appeals for the Second Circuit. Oral argument of this appeal was held on March 16, 2022. Some merchants that opted out from the settlement have brought lawsuits against Visa and Mastercard and one or more of the issuing banks. Resolution by Visa of claims by merchants that opted out of the settlement, including those that file lawsuits, have been or will be paid from the Visa litigation escrow account.

National City and National City Bank entered into judgment and loss sharing agreements with Visa and certain other banks with respect to all of the above referenced litigation. We were not originally named as defendants in any of the Visa or Mastercard related antitrust litigation nor were we initially parties to the judgment or loss sharing agreements. However, we became responsible for National City's and National City Bank's position in the litigation and responsibilities under the agreements through our acquisition of National City. In addition, following Visa's reorganization in 2007 in contemplation of its initial public offering, U.S. Visa members received shares of Class B Visa common stock, convertible upon resolution of specified litigation, including the remaining litigation described above, into shares of Class A Visa common stock, with the conversion rate adjusted to reflect amounts paid or escrowed to resolve the specified litigation, and also remained responsible for indemnifying Visa against the specified litigation. Our Class B Visa common stock is all subject to this conversion adjustment provision, and we are now responsible for the indemnification obligations of our predecessors as well as ourselves. We have also entered into a Mastercard Settlement and Judgment Sharing Agreement with Mastercard and other financial institution defendants and an Omnibus Agreement Regarding Interchange Litigation Sharing and Settlement Sharing with Visa, Mastercard and other financial institution defendants. The Omnibus Agreement, in substance, apportions resolution of the claims in this litigation into a Visa portion and a Mastercard portion, with the Visa portion being two-thirds and the Mastercard portion being one-third. This apportionment only applies in the case of either a global settlement involving all defendants or an adverse judgment against the defendants, to the extent that damages either are related to the merchants' inter-network conspiracy claims or are otherwise not attributed to specific Mastercard or Visa conduct or damages. The Mastercard portion (or any Mastercard-related liability not subject to the Omnibus Agreement) will then be apportioned under the Mastercard Settlement and Judgment Sharing Agreement among Mastercard and PNC and the other financial institution defendants that are parties to this agreement. The responsibility for the Visa portion (or any Visa-related liability not subject to the Omnibus Agreement) will be apportioned under the pre-existing indemnification responsibilities and judgment and loss sharing agreements.

USAA Patent Infringement Litigation

In September 2020, a lawsuit (*United Services Automobile Association v. PNC Bank N.A.* (Case No. 2:20-cv-319)) was filed in the United States District Court for the Eastern District of Texas against PNC Bank for patent infringement ("the first Texas case"). The plaintiff amended its complaint in December 2020. As amended, the complaint alleges that PNC's mobile remote deposit capture systems infringe on four patents owned by the plaintiff. The plaintiff seeks, among other things, a judgment that PNC is infringing each of the patents, damages for willful infringement, and attorneys' fees. In December 2020, we filed a motion to dismiss the amended complaint, and in January 2021, we filed a motion to transfer the lawsuit to the United States District Court for the Western District of Pennsylvania. In February 2021, we answered the amended complaint and asserted counterclaims alleging that the plaintiff infringed four patents owned by PNC Bank, as well as for a declaratory judgment that PNC Bank does not infringe certain patents asserted by the plaintiff. In March 2021, the plaintiff filed a motion to dismiss two of the patent infringement counterclaims, as well as to sever the patent infringement counterclaims for trial. In June 2021, the plaintiff filed an answer to PNC's counterclaims and asserted a counterclaim in reply seeking a declaratory judgment that two of the asserted PNC patents are unenforceable due to inequitable conduct and unclean hands in prosecution of the patents. In September 2021, the court denied our motion to dismiss and our motion to transfer the case. In November 2021, the court denied the plaintiff's motion to dismiss two of the patent infringement counterclaims. Also in November 2021, the court issued a memorandum opinion and order construing certain claim terms of the patents in suit. In February 2022, the magistrate judge granted the plaintiff's motion to sever the patent infringement counterclaims for trial. In March 2022, the court overruled PNC's objections to and adopted the magistrate judge's ruling on the motion to sever.

In December 2020, we filed a lawsuit (*PNC Bank, N.A. v. United Services Automobile Association* (Case No. 2:20-cv-1886)) in the United States District Court for the Western District of Pennsylvania against USAA seeking declaratory judgment of non-infringement as to two of the patents at issue in the first Texas case and awarding PNC its fees and costs. In January 2021, USAA filed a motion to dismiss or transfer PNC Bank's declaratory judgment complaint. In June 2021, the court stayed this case pending a decision on the motion to transfer filed by PNC Bank in the first Texas case. The United States District Court for the Eastern District of Texas denied PNC Bank's motion to transfer in the first Texas case in September 2021. This case presently remains stayed and administratively closed.

In March 2021, USAA filed a second lawsuit (*United Services Automobile Association v. PNC Bank N.A*. (Case No. 2:21-cv-110)) in the United States District Court for the Eastern District of Texas against PNC Bank for patent infringement. The complaint alleges that PNC's mobile remote deposit capture systems infringe two patents owned by the plaintiff. The plaintiff seeks, among other things, a judgment that PNC is infringing each of the patents, damages for willful infringement, and attorneys' fees. In April 2021, we moved to consolidate this action with the first Texas case, and we filed motions to dismiss and transfer this action. In July 2021, this action was consolidated with the first Texas case (together, "the first consolidated cases"). In September 2021, the court denied our motion to dismiss and our motion to transfer for the same reasons set forth in its September 2021 orders in the first Texas case. In November 2021, the court issued a memorandum opinion and order construing certain claim terms of the patents in suit. In May 2022, following a jury trial in the first consolidated cases, a jury found against PNC for willful infringement of at least one of the plaintiff's asserted patent claims and awarded approximately $218 million. In July 2022, the parties submitted briefs on PNC's remaining equitable defenses. In August 2022, the court denied our request for relief, entered final judgment, declined to award enhanced damages for willfulness, and awarded USAA pre-judgment and applicable post-judgment interest. In September 2022, PNC filed its post-trial motions for judgment as a matter of law and for a new trial.

In July 2021, USAA filed a third lawsuit (*United Services Automobile Association v. PNC Bank N.A*. (Case No. 2:21-cv-246)) in the United States District Court for the Eastern District of Texas against PNC Bank for patent infringement ("the third Texas case"). The complaint alleges that PNC's mobile remote deposit capture systems, including its new versions, infringe three additional patents owned by the plaintiff. The plaintiff seeks, among other things, a judgment that PNC is infringing each of the patents, damages for willful infringement, and attorneys' fees. In July 2021, we filed motions to dismiss and transfer this action; the court denied these motions in January 2022. In March 2022, the court issued a memorandum opinion and order construing certain claim terms of the patents in suit. In June 2022, the court opened a new case for PNC's patent infringement counterclaims (originally asserted in the first Texas case) ("the fourth Texas case") and consolidated the fourth Texas case into the third Texas case (together, "the second consolidated cases"). In September 2022, following a jury trial in the second consolidated cases, a jury found against PNC for infringement of at least one of the two asserted patents and awarded $4.3 million, and determined that PNC did not willfully infringe the patents. The jury further found that USAA did not infringe any of PNC's asserted patents. On January 23, 2023, USAA filed a motion for a new trial regarding damages in the second consolidated cases.

In August 2021, USAA filed a lawsuit (*United Services Automobile Association v. BBVA USA* (Case No. 2:21-cv-311)) in the United States District Court for the Eastern District of Texas against BBVA USA for patent infringement ("the BBVA USA Texas case"). The complaint alleges that BBVA USA's remote deposit capture systems infringe the same six USAA patents at issue in the first consolidated cases. The plaintiff seeks, among other things, a judgment that BBVA USA is infringing each of the patents, damages for willful infringement, and attorneys' fees. In October 2021, BBVA USA was merged into PNC Bank. Also in October 2021, we answered the complaint and asserted counterclaims for a declaratory judgment that the asserted patents are invalid and not infringed. In March 2022, the court entered the parties' stipulation to, among other things, proceed under the constructions set forth in the first consolidated cases. In June 2022, the court entered a stipulation proposed by the parties, stayed all deadlines, and administratively closed the matter.

In January 2022, the Patent Trial and Appeal Board granted institution of inter partes review ("IPR") with respect to petitions filed by PNC for three of the six patents then at issue in the first consolidated cases and in the BBVA USA Texas case. The Patent Trial and

Appeal Board denied institution of an IPR with respect to PNC's petitions for three of the six patents then at issue in the first consolidated cases and in the BBVA USA Texas case. Oral argument for the IPR proceedings at the Patent Trial and Appeal Board occurred on October 25 and 26, 2022. Because of USAA's case narrowing in the first consolidated cases, only one of these three patents being reviewed was presented to the jury in the first consolidated cases. On January 19, 2023, with respect to two of the three patents in which an IPR was instituted, the Patent Trial and Appeal Board entered its Final Written Decision. It found each of the challenged claims in these two patents to be unpatentable. One of these patents was presented to the jury in the first consolidated cases. On January 20, 2023, with respect to the third patent in which an IPR was instituted, the Patent Trial and Appeal Board entered its Final Written Decision. It found that all the challenged claims in this third patent were unpatentable. On January 27, 2023, based on the Patent Trial and Appeal Board's finding that the asserted claims of one of the patents presented to the jury in the first consolidated cases were unpatentable, PNC filed a motion seeking leave to file a supplemental brief in support of a motion for a new trial as well as its brief in support for a new trial in the first consolidated cases. On February 1, 2023, the court granted PNC's motion for leave to file a supplemental brief in support for a new trial and accepted PNC's brief for a new trial.

In May and June 2022, the Patent Trial and Appeal Board granted institution of IPR with respect to petitions filed by PNC for two of the three patents then at issue in the third Texas case. The Patent Trial and Appeal Board denied institution of an IPR with respect to PNC's petitions for one of the three patents then at issue in the third Texas case. Oral argument for the first of the two IPR proceedings at the Patent Trial and Appeal Board occurred on February 9 and oral argument for the second is presently scheduled for March 13, 2023. Because of USAA's case narrowing in the third Texas case, only one of these two patents being reviewed was presented to the jury in the third Texas case.

Regulatory and Governmental Inquiries

We are the subject of investigations, audits, examinations and other forms of regulatory and governmental inquiry covering a broad range of issues in our consumer, mortgage, brokerage, securities and other financial services businesses, as well as other aspects of our operations. In some cases, these inquiries are part of reviews of specified activities at multiple industry participants; in others, they are directed at PNC individually. From time to time, these inquiries have involved and may in the future involve or lead to regulatory enforcement actions and other administrative proceedings. These inquiries have also led to and may in the future lead to civil or criminal judicial proceedings. Some of these inquiries result in remedies including fines, penalties, restitution, or alterations in our business practices, and in additional expenses and collateral costs and other consequences. Such remedies and other consequences typically have not been material to us from a financial standpoint, but could be in the future. Even if not financially material, they may result in significant reputational harm or other adverse consequences.

Our practice is to cooperate fully with regulatory and governmental investigations, audits and other inquiries.

Other

In addition to the proceedings or other matters described above, PNC and persons to whom we may have indemnification obligations, in the normal course of business, are subject to various other pending and threatened legal proceedings in which claims for monetary damages and other relief are asserted. We do not anticipate, at the present time, that the ultimate aggregate liability, if any, arising out of such other legal proceedings will have a material adverse effect on our financial position. However, we cannot now determine whether or not any claims asserted against us or others to whom we may have indemnification obligations, whether in the proceedings or other matters described above or otherwise, will have a material adverse effect on our results of operations in any future reporting period, which will depend on, among other things, the amount of the loss resulting from the claim and the amount of income otherwise reported for the reporting period.

NOTE 22 PARENT COMPANY

Summarized financial information of the parent company is as follows:

Table 116: Parent Company - Income Statement

Year ended December 31 In millions	2022	2021	2020
Operating Revenue			
Dividends from continuing operations:			
Bank subsidiaries and bank holding company	$ 3,925	$ 3,980	$ 13,701
Non-bank subsidiaries	280	424	345
Interest income	104	15	38
Noninterest income (loss)	(37)	41	37
Total operating revenue	4,272	4,460	14,121
Operating Expense			
Interest expense	326	129	179
Other expense	136	245	91
Total operating expense	462	374	270
Income before income taxes and equity in undistributed net income of subsidiaries	3,810	4,086	13,851
Equity in undistributed net income of subsidiaries from continuing operations:			
Bank subsidiaries and bank holding company	1,848	1,085	(12,009)
Non-bank subsidiaries	455	543	(86)
Income from continuing operations before taxes	6,113	5,714	1,756
Income tax expense (benefit) from continuing operations	72	41	(1,206)
Net income from continuing operations	6,041	5,673	2,962
Dividends from discontinued operations:			
Bank subsidiaries and bank holding company			126
Equity in undistributed net income of subsidiaries from discontinued operations:			
Bank subsidiaries and bank holding company			5,651
Income from discontinued operations before taxes			5,777
Income taxes from discontinued operations			1,222
Net income from discontinued operations			4,555
Net income	$ 6,041	$ 5,673	$ 7,517
Other comprehensive income, net of tax:			
Net pension and other postretirement benefit plan activity arising during the period	1	11	1
Other comprehensive income	1	11	1
Comprehensive income	$ 6,042	$ 5,684	$ 7,518

Table 117: Parent Company - Balance Sheet

December 31 – in millions	2022	2021
Assets		
Cash held at banking subsidiary	$ 4,654	$ 5,367
Restricted deposits with banking subsidiary	175	175
Investments in:		
Bank subsidiaries and bank holding company	48,867	56,596
Non-bank subsidiaries	3,170	2,693
Loans with affiliates	1,484	1,179
Other assets	2,057	1,999
Total assets	$ 60,407	$ 68,009
Liabilities		
Subordinated debt (a)	$ 1,728	$ 982
Senior debt (a)	11,379	10,362
Other borrowed funds from affiliates		343
Accrued expenses and other liabilities	1,526	627
Total liabilities	14,633	12,314
Equity		
Shareholders' equity	45,774	55,695
Total liabilities and equity	$ 60,407	$ 68,009

(a) See Note 10 Borrowed Funds for additional information on contractual rates and maturity dates of senior debt and subordinated debt for parent company.

In connection with certain affiliates' commercial and residential mortgage servicing operations, the parent company has committed to maintain such affiliates' net worth above minimum requirements.

Table 118: Parent Company - Interest Paid and Income Tax Refunds (Payments)

Year ended December 31 – in millions	Interest Paid	Income Tax Refunds/ (Payments)
2022	$ 314	$ (255)
2021	$ 307	$ 386
2020	$ 335	$ 29

Table 119: Parent Company - Statement of Cash Flows

Year ended December 31 – in millions	2022	2021	2020
Operating Activities			
Net income	$ 6,041	$ 5,673	$ 7,517
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in undistributed net earnings of subsidiaries	(2,303)	(1,628)	
Return on investment in subsidiaries			6,444
Other	95	(248)	237
Net cash provided (used) by operating activities	$ 3,833	$ 3,797	$ 14,198
Investing Activities			
Proceeds from available for sale securities		$ 300	
Net change in loans and securities from affiliates	$ (531)	(1,188)	$ (2,808)
Net change in nonrestricted interest-earning deposits			7,024
Net cash paid for acquisition		(11,358)	
Other	(84)	(5)	
Net cash provided (used) by investing activities	$ (615)	$ (12,251)	$ 4,216
Financing Activities			
Net change in other borrowed funds from affiliates	$ (1,138)	$ (435)	$ 473
Proceeds from long-term borrowings	4,335	1,692	1,986
Repayments of long-term borrowings	(1,500)	(500)	(1,750)
Preferred stock issuances	2,225	1,484	
Preferred stock redemptions	(1,500)		(480)
Common and treasury stock issuances	68	66	65
Acquisition of treasury stock	(3,731)	(1,079)	(1,624)
Preferred stock cash dividends paid	(301)	(233)	(229)
Common stock cash dividends paid	(2,389)	(2,056)	(1,979)
Net cash provided (used) by financing activities	$ (3,931)	$ (1,061)	$ (3,538)
Net Increase (Decrease) In Cash And Due From Banks	$ (713)	$ (9,515)	$ 14,876
Net Cash Provided By Discontinued Operations			11,542
Net Cash Activity From Continuing Operations	(713)	(9,515)	3,334
Cash and restricted deposits held at banking subsidiary at beginning of year	5,542	15,057	181
Cash and restricted deposits held at banking subsidiary at end of year	$ 4,829	$ 5,542	$ 15,057

NOTE 23 SEGMENT REPORTING

We have three reportable business segments:

- Retail Banking
- Corporate & Institutional Banking
- Asset Management Group

Results of individual businesses are presented based on our internal management reporting practices. There is no comprehensive, authoritative body of guidance for management accounting equivalent to GAAP; therefore, the financial results of our individual businesses are not necessarily comparable with similar information for any other company. We periodically refine our internal methodologies as management reporting practices are enhanced. To the extent significant and practicable, retrospective application of new methodologies is made to prior period reportable business segment results and disclosures to create comparability with the current period.

During the second quarter of 2020, we divested our entire 22.4% investment in BlackRock, which had previously been reported as a separate business segment. See Note 2 Acquisition and Divestiture Activity for additional information on the sale and details on our results and cash flow for 2020.

Total business segment financial results differ from total consolidated net income. These differences are reflected in the "Other" category in Table 120. "Other" includes residual activities that do not meet the criteria for disclosure as a separate reportable business, such as asset and liability management activities, including net securities gains or losses, ACL for investment securities, certain trading activities, certain runoff consumer loan portfolios, private equity investments, intercompany eliminations, certain corporate overhead, tax adjustments that are not allocated to business segments, exited businesses and differences between business segment performance reporting and financial statement reporting (GAAP). Assets, revenue and earnings attributable to foreign activities were not material in the periods presented for comparison.

Financial results are presented, to the extent practicable, as if each business operated on a standalone basis. Additionally, we have aggregated the results for corporate support functions within "Other" for financial reporting purposes.

Net interest income in business segment results reflects our internal funds transfer pricing methodology. Assets receive a funding charge and liabilities and capital receive a funding credit based on a transfer pricing methodology that incorporates product repricing characteristics, tenor and other factors.

We have allocated the ALLL and the allowance for unfunded lending related commitments based on the loan exposures within each business segment's portfolio. Key reserve assumptions and estimation processes react to and are influenced by observed changes in loan portfolio performance experience, the financial strength of the borrower and economic conditions. Key reserve assumptions are periodically updated.

Table 120: Results of Businesses

Year ended December 31 In millions	Retail Banking	Corporate & Institutional Banking	Asset Management Group	Other	Consolidated (a)
2022					
Income Statement					
Net interest income	$ 7,540	$ 5,179	$ 608	$ (313)	$ 13,014
Noninterest income	2,967	3,621	936	582	8,106
Total revenue	10,507	8,800	1,544	269	21,120
Provision for (recapture of) credit losses	259	198	28	(8)	477
Depreciation and amortization	310	213	29	587	1,139
Other noninterest expense	7,288	3,438	1,057	248	12,031
Income (loss) from continuing operations before income taxes (benefit) and noncontrolling interests	2,650	4,951	430	(558)	7,473
Income taxes (benefit) from continuing operations	621	1,064	100	(425)	1,360
Net income (loss) from continuing operations	2,029	3,887	330	(133)	6,113
Less: Net income attributable to noncontrolling interests	55	17			72
Net income (loss) from continuing operations excluding noncontrolling interests	$ 1,974	$ 3,870	$ 330	$ (133)	$ 6,041
Average Assets	$ 113,829	$ 219,941	$ 14,505	$ 202,377	$ 550,652
2021					
Income Statement					
Net interest income	$ 6,206	$ 4,526	$ 476	$ (561)	$ 10,647
Noninterest income	2,796	3,783	987	998	8,564
Total revenue	9,002	8,309	1,463	437	19,211
Provision for (recapture of) credit losses	(101)	(646)	(7)	(25)	(779)
Depreciation and amortization	293	208	23	542	1,066
Other noninterest expense	6,623	3,271	918	1,124	11,936
Income (loss) from continuing operations before income taxes (benefit) and noncontrolling interests	2,187	5,476	529	(1,204)	6,988
Income taxes (benefit) from continuing operations	508	1,138	123	(506)	1,263
Net income (loss) from continuing operations	1,679	4,338	406	(698)	5,725
Less: Net income attributable to noncontrolling interests	31	14		6	51
Net income (loss) from continuing operations excluding noncontrolling interests	$ 1,648	$ 4,324	$ 406	$ (704)	$ 5,674
Average Assets	$ 106,331	$ 188,470	$ 11,677	$ 216,688	$ 523,166
2020					
Income Statement					
Net interest income	$ 5,609	$ 3,999	$ 357	$ (19)	$ 9,946
Noninterest income	2,519	3,062	854	520	6,955
Total revenue	8,128	7,061	1,211	501	16,901
Provision for (recapture of) credit losses	968	2,088	21	98	3,175
Depreciation and amortization	251	197	45	490	983
Other noninterest expense	5,768	2,659	813	74	9,314
Income (loss) from continuing operations before income taxes (benefit) and noncontrolling interests	1,141	2,117	332	(161)	3,429
Income taxes (benefit) from continuing operations	266	433	77	(350)	426
Net income from continuing operations	875	1,684	255	189	3,003
Less: Net income attributable to noncontrolling interests	31	10			41
Net income from continuing operations excluding noncontrolling interests	$ 844	$ 1,674	$ 255	$ 189	$ 2,962
Average Assets	$ 97,643	$ 183,189	$ 8,186	$ 160,277	$ 449,295

(a) There were no material intersegment revenues for 2022, 2021 and 2020.

Business Segment Products and Services

Retail Banking provides deposit, lending, brokerage, insurance services, investment management and cash management products and services to consumer and small business customers. Our customers are serviced through our branch network, ATMs, call centers, online banking and mobile channels. As a result of the BBVA acquisition, we have become a coast-to-coast retail bank. Our national expansion strategy is designed to grow customers with digitally-led banking and a thin branch network as we expand into new markets. Deposit products include checking, savings and money market accounts and certificates of deposit. Lending products include residential mortgages, home equity loans and lines of credit, auto loans, credit cards, education loans and personal and small business loans and lines of credit. The residential mortgage loans are directly originated within our branch network and nationwide, and are typically underwritten to agency and/or third-party standards, and either sold, servicing retained or held on our balance sheet. Brokerage, investment management and cash management products and services include managed, education, retirement and trust accounts.

Corporate & Institutional Banking provides lending, treasury management, capital markets and advisory products and services to mid-sized and large corporations and government and not-for-profit entities. Lending products include secured and unsecured loans, letters of credit and equipment leases. The Treasury Management business provides corporations with cash and investment management services, receivables and disbursement management services, funds transfer services, international payment services and access to online/mobile information management and reporting services. Capital markets and advisory includes services and activities primarily related to merger and acquisition advisory, equity capital markets advisory, asset-backed financing, loan syndication, securities underwriting and customer-related trading. We also provide commercial loan servicing and technology solutions for the commercial real estate finance industry. Products and services are provided nationally.

Asset Management Group provides private banking for high net worth and ultra high net worth clients and institutional asset management. The Asset Management group is composed of two operating units:

- PNC Private Bank provides products and services to emerging affluent, high net worth and ultra high net worth individuals and their families including investment and retirement planning, customized investment management, credit and cash management solutions, trust management and administration. In addition, multi-generational family planning services are also provided to ultra high net worth individuals and their families which include estate, financial, tax, fiduciary and customized performance reporting through PNC Private Bank Hawthorn.
- Institutional Asset Management provides outsourced chief investment officer, custody, private real estate, cash and fixed income client solutions, retirement plan fiduciary investment services to institutional clients including corporations, healthcare systems, insurance companies, unions, municipalities and non-profits.

NOTE 24 FEE-BASED REVENUE FROM CONTRACTS WITH CUSTOMERS

A subset of our noninterest income relates to certain fee-based revenue within the scope of ASC Topic 606 - *Revenue from Contracts with Customers* (Topic 606). The objective of the standard is to clarify the principles for recognizing revenue from contracts with customers across all industries and to develop a common revenue standard under GAAP. The standard requires the application of a five-step recognition model to contracts, allocating the amount of consideration we expect to be entitled to across distinct promises in the contract, called performance obligations, and recognizing revenue when or as those services are transferred to the customer.

Fee-based revenue within the scope of Topic 606 is recognized within our three reportable business segments: Retail Banking, Corporate & Institutional Banking and Asset Management Group. Interest income, income from lease contracts, fair value gains from financial instruments (including derivatives), income from mortgage servicing rights and guarantee products, letter of credit fees, non-refundable fees associated with acquiring or originating a loan and gains from the sale of financial assets are outside of the scope of Topic 606.

Effective for the first quarter of 2022, PNC updated the presentation of its noninterest income categorization to be based on product and service type, and accordingly, has changed the basis of presentation of its noninterest income revenue streams to: (i) Asset management and brokerage, (ii) Capital markets related, (iii) Card and cash management, (iv) Lending and deposit services, (v) Residential and commercial mortgage and (vi) Other noninterest income. Additionally, in the fourth quarter of 2022, PNC updated the name of the noninterest income line item “Capital markets related” to “Capital markets and advisory.” This update did not impact the components of the category. All periods presented herein reflect these changes. For a description of each updated noninterest income revenue stream, see Note 1 Accounting Policies.

Table 121 presents the noninterest income recognized within the scope of Topic 606 for each of our three reportable business segments’ principal products and services, along with the relationship to the noninterest income revenue streams shown on our Consolidated Income Statement. A description of the fee-based revenue and how it is recognized for each segment’s principal products and services follows this Table 121.

Table 121: Noninterest Income by Business Segment and Reconciliation to Consolidated Noninterest Income

Year ended December 31 In millions	Retail Banking	Corporate & Institutional Banking	Asset Management Group
2022			
Asset management and brokerage			
Asset management fees			$ 908
Brokerage fees	$ 528		8
Total asset management and brokerage	528		916
Card and cash management			
Treasury management fees	40	$ 1,284	
Debit card fees	684		
Net credit card fees (a)	237		
Merchant services	186	66	
Other	97		
Total card and cash management	1,244	1,350	
Lending and deposit services			
Deposit account fees	583		
Other	67	33	
Total lending and deposit services	650	33	
Residential and commercial mortgage (b)		140	
Capital markets and advisory		790	
Other		59	
Total in-scope noninterest income	2,422	2,372	916
Out-of-scope noninterest income (c)	545	1,249	20
Noninterest income by business segment	$ 2,967	$ 3,621	$ 936

Reconciliation to consolidated noninterest income	**For the year ended December 31, 2022**
Total in-scope business segment noninterest income	$ 5,710
Out-of-scope business segment noninterest income (c)	1,814
Noninterest income from other segments	582
Noninterest income as shown on the Consolidated Income Statement	$ 8,106

(Continued from previous page)

Year ended December 31 In millions	Retail Banking	Corporate & Institutional Banking	Asset Management Group
2021			
Asset management and brokerage			
Asset management fees			$ 964
Brokerage fees	$ 464		9
Total asset management and brokerage	464		973
Card and cash management			
Treasury management fees	46	$ 1,097	
Debit card fees	665		
Net credit card fees (a)	221		
Merchant services	174	62	
Other	115		
Total card and cash management	1,221	1,159	
Lending and deposit services			
Deposit account fees	542		
Other	58	40	
Total lending and deposit services	600	40	
Residential and commercial mortgage (b)		141	
Capital markets and advisory		1,110	
Other		50	
Total in-scope noninterest income	2,285	2,500	973
Out-of-scope noninterest income (c)	511	1,283	14
Noninterest income by business segment	$ 2,796	$ 3,783	$ 987

Reconciliation to consolidated noninterest income	**For the year ended December 31, 2021**
Total in-scope business segment noninterest income	$ 5,758
Out-of-scope business segment noninterest income (c)	1,808
Noninterest income from other segments	998
Noninterest income as shown on the Consolidated Income Statement	$ 8,564

(Continued from previous page)

Year ended December 31 In millions	Retail Banking	Corporate & Institutional Banking	Asset Management Group
2020			
Asset management and brokerage			
Asset management fees			$ 836
Brokerage fees	$ 367		
Total asset management and brokerage	367		836
Card and cash management			
Treasury management fees	33	$ 863	
Debit card fees	522		
Net credit card fees (a)	179		
Merchant services	154	34	
Other	105		
Total card and cash management	993	897	
Lending and deposit services			
Deposit account fees	497		
Other	53	42	
Total lending and deposit services	550	42	
Residential and commercial mortgage (b)		111	
Capital markets and advisory		759	
Other		41	
Total in-scope noninterest income	1,910	1,850	836
Out-of-scope noninterest income (c)	609	1,212	18
Noninterest income by business segment	$ 2,519	$ 3,062	$ 854

Reconciliation to consolidated noninterest income	**For the year ended December 31, 2020**
Total in-scope business segment noninterest income	$ 4,596
Out-of-scope business segment noninterest income (c)	1,839
Noninterest income from other segments	520
Noninterest income as shown on the Consolidated Income Statement	$ 6,955

(a) Net credit card fees consists of interchange fees of $662 million, $582 million and $469 million and credit card reward costs of $425 million, $361 million and $290 million for the years ended December 31, 2022, 2021 and 2020, respectively.
(b) Residential mortgage noninterest income falls under the scope of other accounting and disclosure requirements outside of Topic 606 and is included within the out-of-scope noninterest income line for the Retail Banking segment.
(c) Out-of-scope noninterest income includes revenue streams that fall under the scope of other accounting and disclosure requirements outside of Topic 606.

Retail Banking

Brokerage Fees
Retail Banking earns fee revenue by providing its customers a wide range of investment options through its brokerage services including mutual funds, annuities, stocks, bonds, long-term care and insurance products and managed accounts. We earn fee revenue for transaction-based brokerage services, such as the execution of market trades once the transaction has been completed as of the trade date. In other cases, such as investment management services, we earn fee revenue over the term of the customer contract.

Treasury Management Fees
Retail Banking earns fee revenue by providing customers with receivables and payables management services, funds transfer services, and access to online/mobile information management and reporting services. Treasury management fees are primarily recognized over time as we perform these services.

Debit Card and Net Credit Card Fees
As an issuing bank, Retail Banking earns interchange fee revenue from debit and credit card transactions. By offering card products, we maintain and administer card-related services, such as credit card reward programs, account data and statement information, card activation, card renewals, and card suspension and blockage. Interchange fees are earned when cardholders make purchases and are presented in Table 121 net of credit card reward costs, which are earned by customers when they make purchases.

Merchant Services
Retail Banking earns fee revenue for debit and credit card processing services and products. We provide these services to merchant businesses including point-of-sale payment acceptance capabilities and customized payment processing built around the merchant’s specific requirements. We earn fee revenue as the merchant’s customers make purchases.

Deposit Account Fees
Retail Banking provides demand deposit, money market and savings account products for consumer and small business customers. Services include online and branch banking, overdraft and wire transfer services, imaging services and cash alternative services, such as money orders and cashier's checks. We recognize fee income at the time these services are performed for the customer.

Other
Other noninterest income primarily includes ATM fees earned from our customers and non-PNC customers. These fees are recognized as transactions occur.

Corporate & Institutional Banking

Treasury Management Fees
Corporate & Institutional Banking provides corporations with cash and investment management services, receivables and disbursement management services, funds transfer services, international payment services and access to online/mobile information management and reporting services. Treasury management fees are primarily recognized over time as we perform these services.

Merchant Services
Corporate & Institutional Banking earns fee revenue for debit and credit card processing services and products. We provide these services to merchant businesses including point-of-sale payment acceptance capabilities and customized payment processing built around the merchant's specific requirements. We earn fee revenue as the merchant's customers make purchases.

Commercial Mortgage
Commercial mortgage banking activities include servicing responsibilities where we do not own the servicing rights. Servicing responsibilities typically consist of collecting and remitting monthly borrower principal and interest payments, maintaining escrow deposits, performing loss mitigation and foreclosure activities, and, in certain instances, funding of servicing advances. We recognize servicing fees over time as we perform these activities.

Capital Markets and Advisory
Capital markets and advisory fees include securities underwriting fees, merger and acquisition advisory fees and other advisory-related fees. We generally recognize these fees when the related transaction closes.

Other
Other noninterest income within Corporate & Institutional Banking is primarily comprised of fees from collateral management and asset management services. We earn these fees over time as we perform these services.

Asset Management Group

Asset Management Fees
Asset Management Group provides both personal wealth and institutional asset management services including investment management, custody services, retirement planning, family planning, trust management and retirement plan fiduciary investment services. Asset management fees are recognized over the term of the customer contract based on the value of assets under management at a point in time.

Brokerage Fees
Asset Management Group provides a wide range of investment options through its brokerage services including mutual funds, annuities, stocks, bonds, insurance products, and managed accounts. Brokerage fees are recognized over the term of the customer contract either based on the value of brokerage assets at a point in time or based on transactions executed on behalf of the customer.

NOTE 25 SUBSEQUENT EVENTS

On January 19, 2023, the parent company issued $1.25 billion of senior fixed-to-floating rate notes with a maturity date of January 26, 2027 (the "2027 Senior Notes") and $1.5 billion of senior fixed-to-floating rate notes with a maturity date of January 24, 2034 (the "2034 Senior Notes"). Interest is payable on the 2027 Senior Notes semi-annually in arrears at a fixed rate of 4.758% per annum, on January 26 and July 26 of each year, beginning on July 26, 2023. Beginning on January 26, 2026, interest is payable on the 2027 Senior Notes quarterly in arrears at a floating rate per annum equal to Compounded SOFR (determined with respect to each quarterly interest period using the SOFR Index as described in the Prospectus Supplement), plus 1.085%, on April 26, 2026, July 26, 2026, October 26, 2026 and at the maturity date. Interest is payable on the 2034 Senior Notes semi-annually in arrears at a fixed rate of 5.068% per annum, on January 24 and July 24 of each year, beginning on July 24, 2023. Beginning on January 24, 2033, interest is payable on the 2034 Senior Notes quarterly in arrears at a floating rate per annum equal to Compounded SOFR (determined with respect to each quarterly interest period using the SOFR Index as described in the Prospectus Supplement), plus 1.933%, on April 24, 2033, July 24, 2023, October 24, 2033 and at the maturity date.

On February 7, 2023, PNC issued 1,500,000 depositary shares each representing 1/100th ownership in a share of 6.250% fixed-rate reset non-cumulative perpetual preferred stock, Series W, with a par value of $1 per share.

STATISTICAL INFORMATION (UNAUDITED)

THE PNC FINANCIAL SERVICES GROUP, INC.

AVERAGE CONSOLIDATED BALANCE SHEET AND NET INTEREST ANALYSIS (a) (b) (c) (d)

	2022			2021			2020		
Taxable-equivalent basis Dollars in millions	Average Balances	Interest Income/ Expense	Average Yields/ Rates	Average Balances	Interest Income/ Expense	Average Yields/ Rates	Average Balances	Interest Income/ Expense	Average Yields/ Rates
Assets									
Interest-earning assets:									
Investment securities									
Securities available for sale									
Residential mortgage-backed									
Agency	$ 42,151	$ 889	2.11 %	$ 57,325	$ 881	1.54 %	$ 50,594	$ 1,109	2.19 %
Non-agency	842	64	7.60 %	1,100	84	7.64 %	1,480	109	7.36 %
Commercial mortgage-backed	4,107	104	2.53 %	6,093	149	2.45 %	6,865	183	2.67 %
Asset-backed	2,184	37	1.69 %	5,745	99	1.72 %	5,090	129	2.53 %
U.S. Treasury and government agencies	21,642	314	1.45 %	34,394	448	1.30 %	17,234	324	1.88 %
Other	3,982	102	2.56 %	4,852	144	2.97 %	4,564	160	3.51 %
Total securities available for sale	74,908	1,510	2.02 %	109,509	1,805	1.65 %	85,827	2,014	2.35 %
Securities held to maturity									
Residential mortgage-backed	29,325	677	2.31 %						
Commercial mortgage-backed	1,400	51	3.64 %						
Asset-backed	4,446	122	2.74 %				18		
U.S. Treasury and government agencies	25,074	300	1.20 %	805	23	2.86 %	786	22	2.80 %
Other	1,996	87	4.31 %	660	27	4.09 %	648	28	4.32 %
Total securities held to maturity	62,241	1,237	1.99 %	1,465	50	3.41 %	1,452	50	3.44 %
Total investment securities	137,149	2,747	2.00 %	110,974	1,855	1.67 %	87,279	2,064	2.36 %
Loans									
Commercial and industrial	168,663	6,079	3.60 %	143,389	4,180	2.92 %	139,254	4,276	3.07 %
Commercial real estate	34,954	1,389	3.97 %	33,159	991	2.99 %	28,765	858	2.98 %
Equipment lease financing	6,196	238	3.84 %	6,286	240	3.82 %	6,812	263	3.86 %
Consumer	54,721	2,814	5.14 %	54,338	2,602	4.79 %	55,423	2,730	4.93 %
Residential real estate	43,165	1,366	3.16 %	31,524	1,047	3.32 %	22,379	852	3.81 %
Total loans	307,699	11,886	3.86 %	268,696	9,060	3.37 %	252,633	8,979	3.55 %
Interest-earning deposits with banks	41,050	578	1.41 %	79,869	103	0.13 %	47,333	100	0.21 %
Other interest-earning assets	9,651	337	3.50 %	8,539	190	2.23 %	9,553	239	2.50 %
Total interest-earning assets/interest income	495,549	15,548	3.14 %	468,078	11,208	2.39 %	396,798	11,382	2.87 %
Noninterest-earning assets	55,103			55,088			52,497		
Total assets	$550,652			$523,166			$449,295		
Liabilities and Equity									
Interest-bearing liabilities:									
Interest-bearing deposits									
Money market	$ 61,376	444	0.72 %	$ 68,124	19	0.03 %	$ 60,229	138	0.23 %
Demand	118,749	583	0.49 %	101,471	30	0.03 %	82,295	109	0.13 %
Savings	106,577	176	0.17 %	91,194	44	0.05 %	75,574	233	0.31 %
Time deposits	12,340	64	0.52 %	18,439	33	0.18 %	20,673	163	0.79 %
Total interest-bearing deposits	299,042	1,267	0.42 %	279,228	126	0.05 %	238,771	643	0.27 %
Borrowed funds									
Federal Home Loan Bank borrowings	13,674	440	3.22 %	661	3	0.45 %	9,470	103	1.09 %
Senior debt	16,265	401	2.47 %	22,390	224	1.00 %	27,030	428	1.58 %
Subordinated debt	7,081	206	2.91 %	6,432	86	1.34 %	5,936	112	1.89 %
Other	5,430	108	1.99 %	5,025	48	0.96 %	5,502	75	1.36 %
Total borrowed funds	42,450	1,155	2.72 %	34,508	361	1.05 %	47,938	718	1.50 %
Total interest-bearing liabilities/interest expense	341,492	2,422	0.71 %	313,736	487	0.16 %	286,709	1,361	0.47 %
Noninterest-bearing liabilities and equity:									
Noninterest-bearing deposits	144,382			139,683			95,055		
Accrued expenses and other liabilities	16,414			15,299			15,774		
Equity	48,364			54,448			51,757		
Total liabilities and equity	$550,652			$523,166			$449,295		
Interest rate spread			2.43 %			2.23 %			2.40 %
Benefit from use of noninterest bearing sources			0.22			0.06			0.13
Net interest income/margin		$ 13,126	2.65 %		$ 10,721	2.29 %		$ 10,021	2.53 %

(a) Calculated using average daily balances.

(b) Nonaccrual loans are included in loans, net of unearned income. The impact of financial derivatives used in interest rate risk management is included in the interest income/expense and average yields/rates of the related assets and liabilities. Basis adjustments related to hedged items are included in noninterest-earning assets and noninterest-bearing liabilities. Average balances of securities are based on amortized historical cost (excluding adjustments to fair value, which are included in other assets). Average balances for certain loans and borrowed funds accounted for at fair value are included in noninterest-earning assets and noninterest-bearing liabilities, with changes in fair value recorded in Noninterest income.

(c) Loan fees for the years ended December 31, 2022, 2021 and 2020 were $188 million, $208 million and $156 million, respectively.

(d) Interest income calculated as taxable-equivalent interest income. To provide more meaningful comparisons of interest income and yields for all interest-earning assets, as well as net interest margins, we use interest income on a taxable-equivalent basis in calculating average yields and net interest margin by increasing the interest income earned on tax-exempt assets to make it fully equivalent to interest income earned on taxable investments. This adjustment is not permitted under GAAP. See Reconciliation of Taxable-Equivalent Net Interest Income in this Statistical Information section for more information.

Analysis of Year-To-Year Changes in Net Interest Income (a) (b)

Taxable-equivalent basis In millions	2022/2021 Increase/(Decrease) in Income/ Expense Due to Changes in: Volume	Rate	Total	2021/2020 Increase/(Decrease) in Income/ Expense Due to Changes in: Volume	Rate	Total
Interest-Earning Assets						
Investment securities						
Securities available for sale						
Residential mortgage-backed						
Agency	$ (269)	$ 277	$ 8	$ 134	$ (362)	$ (228)
Non-agency	$ (20)		(20)	$ (29)	$ 4	(25)
Commercial mortgage-backed	$ (50)	$ 5	(45)	$ (20)	$ (14)	(34)
Asset-backed	$ (60)	$ (2)	(62)	$ 15	$ (45)	(30)
U.S. Treasury and government agencies	$ (181)	$ 47	(134)	$ 247	$ (123)	124
Other	$ (24)	$ (18)	(42)	$ 10	$ (26)	(16)
Total securities available for sale	$ (644)	$ 349	(295)	$ 476	$ (685)	(209)
Securities held to maturity						
Residential mortgage-backed		$ 677	677			
Commercial mortgage-backed		$ 51	51			
Asset-backed		$ 122	122			
U.S. Treasury and government agencies	$ 297	$ (20)	277			
Other	$ 59	$ 1	60	$ 1	$ (1)	
Total securities held to maturity	$ 1,217	$ (30)	1,187			
Total investment securities	$ 485	$ 407	892	$ 481	$ (690)	(209)
Loans						
Commercial and industrial	$ 811	$ 1,088	1,899	$ 125	$ (221)	(96)
Commercial real estate	$ 56	$ 342	398	$ 131	$ 2	133
Equipment lease financing	$ (3)	$ 1	(2)	$ (20)	$ (3)	(23)
Consumer	$ 18	$ 194	212	$ (53)	$ (75)	(128)
Residential real estate	$ 370	$ (51)	319	$ 314	$ (119)	195
Total loans	$ 1,411	$ 1,415	2,826	$ 555	$ (474)	81
Interest-earning deposits with banks	$ (73)	$ 548	475	$ 52	$ (49)	3
Other interest-earning assets	$ 27	$ 120	147	$ (24)	$ (25)	(49)
Total interest-earning assets	$ 684	$ 3,656	$ 4,340	$ 1,883	$ (2,057)	$ (174)
Interest-Bearing Liabilities						
Interest-bearing deposits						
Money market	$ (2)	$ 427	$ 425	$ 16	$ (135)	$ (119)
Demand	$ 6	$ 547	553	$ 21	$ (100)	(79)
Savings	$ 8	$ 124	132	$ 40	$ (229)	(189)
Time deposits	$ (14)	$ 45	31	$ (16)	$ (114)	(130)
Total interest-bearing deposits	$ 10	$ 1,131	1,141	$ 94	$ (611)	(517)
Borrowed funds						
Federal Home Loan Bank borrowings	$ 335	$ 102	437	$ (62)	$ (38)	(100)
Senior debt	$ (75)	$ 252	177	$ (64)	$ (140)	(204)
Subordinated debt	$ 10	$ 110	120	$ 9	$ (35)	(26)
Other	$ 4	$ 56	60	$ (7)	$ (20)	(27)
Total borrowed funds	$ 100	$ 694	794	$ (172)	$ (185)	(357)
Total interest-bearing liabilities	$ 48	$ 1,887	1,935	$ 113	$ (987)	(874)
Change in net interest income	$ 654	$ 1,751	$ 2,405	$ 1,704	$ (1,004)	$ 700

(a) Changes attributable to rate/volume are prorated into rate and volume components.

(b) Interest income calculated as taxable-equivalent interest income. To provide more meaningful comparisons of interest income, we use interest income on a taxable-equivalent basis by increasing the interest income earned on tax-exempt assets to make it fully equivalent to interest income earned on taxable investments. This adjustment is not permitted under GAAP. See Reconciliation of Taxable-Equivalent Net Interest Income in this Statistical Information section for more information.

Non-GAAP Financial Information

PNC reports certain financial measures that are not in accordance with GAAP. These non-GAAP financial measures are provided as supplemental information to the financial measures in this Report that are calculated and presented in accordance with GAAP. While we believe that these non-GAAP measures are useful tools for the purpose of evaluating certain financial results, they should not be considered superior to and are not intended to be considered in isolation or as a substitute for the related GAAP financial measures presented in this Report.

Reconciliation of Taxable-Equivalent Net Interest Income (non-GAAP) (a)

Year ended December 31 In millions	2022	2021	2020
Net interest income (GAAP)	$ 13,014	$ 10,647	$ 9,946
Taxable-equivalent adjustments	112	74	75
Net interest income (non-GAAP)	$ 13,126	$ 10,721	$ 10,021

(a) The interest income earned on certain earning assets is completely or partially exempt from federal income tax. As such, these tax-exempt instruments typically yield lower returns than taxable investments. To provide more meaningful comparisons of net interest income, we use interest income on a taxable-equivalent basis by increasing the interest income earned on tax-exempt assets to make it fully equivalent to interest income earned on taxable investments. This adjustment is not permitted under GAAP.

Reconciliation of Tangible Book Value Per Common Share (non-GAAP)

December 31 Dollars in millions, except per share data	2022	2021	2020
Book value per common share	$ 99.93	$ 120.61	$ 119.11
Tangible book value per common share			
Common shareholders' equity	$ 40,028	$ 50,685	$ 50,493
Goodwill and other intangible assets	(11,400)	(11,406)	(9,381)
Deferred tax liabilities on goodwill and other intangible assets	261	270	188
Tangible common shareholders' equity	$ 28,889	$ 39,549	$ 41,300
Period-end common shares outstanding (in millions)	401	420	424
Tangible book value per common share (non-GAAP) (a)	$ 72.12	$ 94.11	$ 97.43

(a) Tangible book value per common share is a non-GAAP measure and is calculated based on tangible common shareholders' equity divided by period-end common shares outstanding. We believe this non-GAAP measure serves as a useful tool to help evaluate the strength and discipline of a company's capital management strategies and as an additional, conservative measure of total company value.

Selected Loan Maturities and Interest Sensitivity

	Loans Due After 1 Year		Contractual Maturity Range				
December 31, 2022 In millions	Predetermined Rate	Floating or Adjustable Rate	1 Year or Less	After 1 Year Through 5 Years	After 5 Years Through 15 Years	After 15 Years	Gross Loans
Commercial							
Commercial and industrial	$ 20,235	$ 121,380	$ 40,604	$ 125,101	$ 13,440	$ 3,074	$ 182,219
Commercial real estate	6,489	19,408	10,419	20,780	4,265	852	36,316
Equipment lease financing	4,531	145	1,838	4,017	659		6,514
Total commercial	31,255	140,933	52,861	149,898	18,364	3,926	225,049
Consumer							
Residential real estate	29,609	14,533	1,747	5,408	14,613	24,121	45,889
Home equity	14,237	10,388	1,358	4,716	8,433	11,476	25,983
Automobile	10,847		3,989	10,000	847		14,836
Credit card			7,069				7,069
Education	552	1,443	178	715	1,121	159	2,173
Other consumer	1,279	360	3,387	1,528	111		5,026
Total consumer	56,524	26,724	17,728	22,367	25,125	35,756	100,976
Total loans	$ 87,779	$ 167,657	$ 70,589	$ 172,265	$ 43,489	$ 39,682	$ 326,025

At December 31, 2022, $39.9 billion notional amount of receive-fixed interest rate swaps were designated as part of cash flow hedging strategies that converted the floating rate (LIBOR/SOFR) on the underlying commercial loans to a fixed rate as part of risk management strategies.

Uninsured Deposits

The aggregate amount of uninsured deposits, defined as (i) the portion of deposit accounts in U.S. offices that exceed the FDIC insurance limit or similar state deposit insurance regime and (ii) amounts in any other uninsured investment or deposit accounts that are classified as deposits and not subject to any federal or state deposit insurance regime were estimated to be $200.0 billion and $197.8 billion at December 31, 2022 and 2021, respectively. The portion of U.S. time deposits in excess of the FDIC insurance limit or similar state deposit regime was $9.3 billion at December 31, 2022.

GLOSSARY

DEFINED TERMS

2019 Tailoring Rules – Rules adopted by the federal banking agencies to better tailor the application of their capital, liquidity, and enhanced prudential requirements for banking organizations to the asset size and risk profile (as measured by certain regulatory metrics) of the banking organization. Effective January 1, 2020, the agencies' capital and liquidity rules classify all BHCs with $100 billion or more in total assets into one of four categories (Category I, Category II, Category III, and Category IV).

Adjusted average total assets – Primarily consisted of total average quarterly (or annual) assets plus/less unrealized losses (gains) on investment securities, less goodwill and certain other intangible assets (net of eligible deferred taxes).

Allowance for credit losses (ACL) – A valuation account that is deducted from or added to the amortized cost basis of the related financial assets to present the net carrying value at the amount expected to be collected on the financial asset.

Amortized cost basis – Amount at which a financial asset is originated or acquired, adjusted for applicable accretion or amortization of premiums, discounts and net deferred fees or costs, collection of cash, charge-offs, foreign exchange and fair value hedge accounting adjustments.

Basel III common equity Tier 1 (CET1) capital (Tailoring Rules) – Common stock plus related surplus, net of treasury stock, plus retained earnings, less goodwill, net of associated deferred tax liabilities, less other disallowed intangibles, net of deferred tax liabilities and plus/less other adjustments. Investments in unconsolidated financial institutions, as well as mortgage servicing rights and deferred tax assets, must then be deducted to the extent such items (net of associated deferred tax liabilities) individually exceed 25% of our adjusted Basel III common equity Tier 1 capital.

Basel III common equity Tier 1 capital ratio – Common equity Tier 1 capital divided by period-end risk-weighted assets (as applicable).

Basel III Tier 1 capital – Common equity Tier 1 capital, plus qualifying preferred stock, plus certain trust preferred capital securities, plus certain noncontrolling interests that are held by others and plus/less other adjustments.

Basel III Tier 1 capital ratio – Basel III Tier 1 capital divided by period-end risk-weighted assets (as applicable).

Basel III Total capital – Tier 1 capital plus qualifying subordinated debt, plus certain trust preferred securities, plus, under the Basel III transitional rules and the standardized approach, the allowance for loan and lease losses included in Tier 2 capital and other.

Basel III Total capital ratio – Basel III Total capital divided by period-end risk-weighted assets (as applicable).

Basel Committee – Basel Committee on Banking Supervision.

BBVA – BBVA USA Bancshares, Inc.

BBVA USA – BBVA USA, the Alabama-chartered bank subsidiary of BBVA USA Bancshares, Inc.

BlackRock – BlackRock, Inc.

Bloomberg Short-Term Bank Yield Index (BSBY) – BSBY is a series of credit sensitive reference rates that incorporate bank credit spreads and defines a forward term structure. BSBY seeks to measure the average yields at which large global banks access senior unsecured marginal wholesale funding.

Charge-off – Process of removing a loan or portion of a loan from our balance sheet because it is considered uncollectible. We also record a charge-off when a loan is transferred from portfolio holdings to held for sale by reducing the loan carrying amount to the fair value of the loan, if fair value is less than carrying amount.

Collateral dependent loans – Loans expected to be repaid substantially through the operation or sale of the collateral underlying the loan when a borrower is experiencing financial difficulty, and for which we have elected to measure the loan at the estimated fair value of collateral (less costs to sell if sale or foreclosure of the property is expected). Additionally, we consider a loan to be collateral dependent when foreclosure or liquidation of the underlying collateral is probable.

Combined loan-to-value ratio (CLTV) – This is the aggregate principal balance(s) of the mortgages on a property divided by its appraised value or purchase price.

Common shareholders’ equity – Total shareholders’ equity less the liquidation value of preferred stock.

Company – The PNC Financial Services Group, Inc. and its subsidiaries (interchangeable with “PNC,” “we,” “us,” “the Company” or “the Corporation” on this Report).

COVID-19 – The coronavirus that emerged in late 2019, which resulted in a worldwide pandemic beginning in 2020 (interchangeable with “the pandemic” or “the COVID-19 pandemic” in this Report).

Credit valuation adjustment – Represents an adjustment to the fair value of our derivatives for our own and counterparties’ non-performance risk.

Criticized commercial loans – Loans with potential or identified weaknesses based upon internal risk ratings that comply with the regulatory classification definitions of “special mention,” “substandard” or “doubtful.”

Current Expected Credit Loss (CECL) – Methodology for estimating the ACL on in-scope financial assets held at amortized cost and unfunded lending related commitments, which uses a combination of expected losses over a reasonable and supportable forecast period, a reversion period and long run average credit losses for their estimated contractual term.

Discretionary client assets under management – Assets over which we have sole or shared investment authority for our customers/ clients. We do not include these assets on our Consolidated Balance Sheet.

Dodd-Frank – Dodd-Frank Wall Street Reform and Consumer Protection Act.

Earning assets – Assets that generate income, which include: interest-earning deposits with banks, loans held for sale, loans, investment securities and certain other assets.

Effective duration – A measurement, expressed in years, that, when multiplied by a change in interest rates, would approximate the percentage change in value of on- and off- balance sheet positions.

Efficiency – Noninterest expense divided by total revenue.

Estimated contractual term - In the context of CECL, the contractual term of the financial asset or credit exposure, adjusted for estimated draws and prepayments, certain embedded extension options and extensions granted under troubled debt restructurings.

Exchange Act – Securities Exchange Act of 1934, as amended.

Exposure at default (EAD) – The credit exposure estimated to be outstanding in the event of default of a credit obligor.

Fair value – 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.

Federal Reserve – The Board of Governors of the Federal Reserve System.

Fee income – Refers to the following categories within Noninterest income: Asset management and brokerage, Capital markets and advisory, Card and cash management, Lending and deposit services, and Residential and commercial mortgage.

FICO score – A credit bureau-based industry standard score created by Fair Isaac Co. which predicts the likelihood of borrower default. We use FICO scores both in underwriting and assessing credit risk in our consumer lending portfolio. Lower FICO scores indicate likely higher risk of default, while higher FICO scores indicate likely lower risk of default.

Foreign exchange contracts – Contracts that provide for the future receipt and delivery of foreign currency at previously agreed-upon terms.

Futures and forward contracts – Contracts in which the buyer agrees to purchase and the seller agrees to deliver a specific financial instrument at a predetermined price or yield. May be settled either in cash or by delivery of the underlying financial instrument.

Home price index (HPI) – A broad measure of the movement of single-family house prices in the U.S.

Interest rate swap contracts – Contracts that are entered into primarily as an asset/liability management strategy to reduce interest rate risk. Interest rate swap contracts are exchanges of interest rate payments, such as fixed-rate payments for floating-rate payments, based on notional principal amounts.

Intrinsic value – The difference between the price, if any, required to be paid for stock issued pursuant to an equity compensation arrangement and the fair market value of the underlying stock.

Leverage ratio – Basel III Tier 1 capital divided by average quarterly adjusted total assets.

London InterBank Offered Rate (LIBOR) – LIBOR is the average interest rate charged when banks in the London wholesale money market (or interbank market) borrow unsecured funds from each other.

Loan-to-value ratio (LTV) – A calculation of a loan's collateral coverage that is used both in underwriting and assessing credit risk in our lending portfolio. LTV is the sum total of loan obligations secured by collateral divided by the market value of that same collateral. Market value of the collateral is based on an independent valuation of the collateral. For example, a LTV of less than 90% is better secured and has less credit risk than a LTV of greater than or equal to 90%.

Long run average – In the context of CECL, expected credit losses or credit risk parameters for the remaining estimated contractual maturity beyond the reasonable and supportable forecast and reversion periods. The long run average is generally derived from historical loss information and current portfolio characteristics, without considering current or forecasted conditions.

Loss given default (LGD) – Assuming a credit obligor enters default status, an estimate of loss, based on collateral type, collateral value, loan exposure and other factors. LGD is net of recovery, through any means, including but not limited to the liquidation of collateral or deficiency judgments rendered from foreclosure or bankruptcy proceedings.

Nonaccrual loans – Loans for which we do not accrue interest income. Nonaccrual loans include nonperforming loans, in addition to loans accounted for under fair value option and loans accounted for as held for sale for which full collection of contractual principal and/or interest is not probable.

Nondiscretionary client assets under administration – Assets we hold for our customers/clients in a nondiscretionary, custodial capacity. We do not include these assets on our Consolidated Balance Sheet.

Nonperforming assets – Nonperforming assets include nonperforming loans, OREO and foreclosed assets. We do not accrue interest income on assets classified as nonperforming.

Nonperforming loans – Loans accounted for at amortized cost whose credit quality has deteriorated to the extent that full collection of contractual principal and interest is not probable, including TDRs which have not returned to performing status. Interest income is not recognized on nonperforming loans. Nonperforming loans exclude certain government insured or guaranteed loans for which we expect to collect substantially all principal and interest, loans held for sale, and loans accounted for under the fair value option.

Notional amount – The basis to which the underlying referenced interest rate, security price, credit spread or other index is applied to determine required payments under the derivative contract.

Off-balance sheet arrangements – Activities that involve entities that are not consolidated or otherwise reflected in our Consolidated Balance Sheet.

Operating leverage – The period to period dollar or percentage change in total revenue less the dollar or percentage change in noninterest expense. A positive variance indicates that revenue growth exceeded expense growth (*i.e.*, positive operating leverage) while a negative variance implies expense growth exceeded revenue growth (*i.e.*, negative operating leverage).

Options – Contracts that grant the purchaser, for a premium payment, the right, but not the obligation, to either purchase or sell the associated financial instrument at a set price during a specified period or at a specified date in the future.

Other real estate owned (OREO) and foreclosed assets – Assets taken in settlement of troubled loans primarily through deed-in-lieu of foreclosure or foreclosure. Foreclosed assets include real and personal property. Certain assets that have a government-guarantee which are classified as other receivables are excluded.

PNC Bank – PNC Bank, National Association.

Probability of default (PD) – An estimate of the likelihood that a credit obligor will enter default status.

Purchased credit deteriorated assets (PCD) – Acquired loans or debt securities that, at acquisition, are determined to have experienced a more-than-insignificant deterioration in credit quality since origination or issuance.

Reasonable and supportable forecast period – In the context of CECL, the period for which forecasts and projections of macroeconomic variables have been determined to be reasonable and supportable, and are used as inputs for ACL measurement.

Recovery – Cash proceeds received on a loan that we had previously charged-off. We credit the amount received to the allowance for loan and lease losses.

Reversion period – In the context of CECL, the period between the end of the reasonable and supportable forecast period and the point at which losses are expected to have reverted to their long run average, in order to reflect an overall reasonable estimate of expected credit losses.

Risk appetite – A dynamic, forward-looking view on the aggregate amount of risk we are willing and able to take in executing business strategy in light of the current business environment.

Risk limits – Quantitative measures based on forward-looking assumptions that allocate our aggregate risk appetite (*e.g.,* measure of loss or negative events) to business lines, legal entities, specific risk categories, concentrations and as appropriate, other levels.

Risk profile – The risk profile is a point-in-time assessment of risk. The profile represents overall risk position in relation to the desired risk appetite. The determination of the risk profile's position is based on qualitative and quantitative analysis of reported risk limits, metrics, operating guidelines and qualitative assessments.

Risk-weighted assets – Computed by the assignment of specific risk-weights (as defined by the Board of Governors of the Federal Reserve System) to assets and off-balance sheet instruments.

Secured Overnight Financing Rate (SOFR) – SOFR is a reference rate that is based on overnight transactions in the U.S. Treasury repurchase market.

Servicing rights – Intangible assets or liabilities created by an obligation to service assets for others. Typical servicing rights include the right to receive a fee for collecting and forwarding payments on loans and related taxes and insurance premiums held in escrow.

Supplementary leverage exposure – The sum of adjusted average assets and certain off-balance sheet exposures, including undrawn credit commitments and derivative potential future exposures.

Supplementary leverage ratio – Basel III Tier 1 capital divided by Supplementary leverage exposure.

Taxable-equivalent interest income – The interest income earned on certain assets that is completely or partially exempt from federal income tax. These tax-exempt instruments typically yield lower returns than taxable investments.

Troubled debt restructuring (TDR) – A loan whose terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties.

Unfunded lending related commitments – Standby letters of credit, financial guarantees, commitments to extend credit and similar unfunded obligations that are not unilaterally, unconditionally, cancellable at PNC's option.

Value-at-risk (VaR) – A statistically-based measure of risk that describes the amount of potential loss which may be incurred due to adverse market movements. The measure is of the maximum loss which should not be exceeded on 95 out of 100 days for a 95% VaR.

Yield curve – A graph showing the relationship between the yields on financial instruments or market indices of the same credit quality with different maturities. For example, a "normal" or "positive" yield curve exists when long-term bonds have higher yields than short-term bonds. A "flat" yield curve exists when yields are the same for short-term and long-term bonds. A "steep" yield curve exists when yields on long-term bonds are significantly higher than on short-term bonds. An "inverted" or "negative" yield curve exists when short-term bonds have higher yields than long-term bonds.

ACRONYMS

ACL	Allowance for credit losses	**GNMA**	Government National Mortgage Association
ALLL	Allowance for loan and lease losses	**GSIB**	Globally systemically important bank
AML	Anti-Money Laundering	**HPI**	Home price index
AOCI	Accumulated other comprehensive income	**ISDA**	International Swaps and Dealer Association
ASC	Accounting Standards Codification	**ISP**	The PNC Incentive Savings Plan
ASU	Accounting Standards Update	**LCR**	Liquidity Coverage Ratio
BEC	Business email compromise scams	**LGD**	Loss given default
BHC	Bank holding company	**LIBOR**	London Interbank Offered Rate
BHC Act	Bank Holding Company Act of 1956	**LIHTC**	Low income housing tax credit
bps	Basis points	**LLC**	Limited liability company
BSA	Bank Secrecy Act	**LTV**	Loan-to-value ratio
BSBY	Bloomberg Short-Term Bank Yield Index	**MD&A**	Management's Discussion and Analysis of Financial Condition and Results of Operations
CARES Act	Coronavirus Aid, Relief and Economic Security Act	**MSR**	Mortgage servicing right
CCAR	Comprehensive Capital Analysis and Review	**NAV**	Net asset value
CECL	Current Expected Credit Losses	**NSFR**	Net Stable Funding Ratio
CET1	Common equity tier 1	**OCC**	Office of the Comptroller of the Currency
CFPB	Consumer Financial Protection Bureau	**OCI**	Other comprehensive income
CFTC	Commodity Futures Trading Commission	**OREO**	Other real estate owned
CLTV	Combined loan-to-value ratio	**OTC**	Over-the-counter
CRA	Community Reinvestment Act	**OTTI**	Other than temporary impairment
DFAST	Dodd-Frank capital stress testing	**PCD**	Purchased credit deteriorated
DUS	Delegated Underwriting and Servicing program	**PD**	Probability of default
EAD	Exposure at default	**PPP**	Paycheck Protection Program
ERISA	Employee Retirement Income Security Act of 1974, as amended	**RAC**	Reserve Adequacy Committee
ERM	Enterprise Risk Management	**ROAPs**	Removal of account provisions
FDI Act	Federal Deposit Insurance Act	**ROU**	Right-of-use assets
FDIC	Federal Deposit Insurance Corporation	**SCB**	Stress capital buffer
FHA	Federal Housing Administration	**SCCL**	Single counterparty credit limit
FHLB	Federal Home Loan Bank	**SEC**	Securities and Exchange Commission
FHLMC	Federal Home Loan Mortgage Corporation	**SOFR**	Secured Overnight Financing Rate
FICO	Fair Isaac Corporation (credit score)	**SPE**	Special purpose entity
FinCEN	Financial Crimes Enforcement Network	**TDR**	Troubled debt restructuring
FINRA	Financial Industry Regulatory Authority	**U.S.**	United States of America
FNMA	Federal National Mortgage Association	**USD**	United States Dollar
FOMC	Federal Open Market Committee	**VA**	Department of Veterans Affairs
FSOC	Financial Stability Oversight Council	**VaR**	Value-at-risk
GAAP	Accounting principles generally accepted in the United States of America	**VEBA**	Voluntary Employee Beneficiary Association
GDP	Gross Domestic Product	**VIE**	Variable interest entity
GLB Act	Gramm-Leach-Bliley Act		

ITEM 9 – CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A – CONTROLS AND PROCEDURES

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of The PNC Financial Services Group, Inc. and subsidiaries (PNC) is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Exchange Act Rule 13a-15(f).

Because of 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.

We performed an evaluation under the supervision and with the participation of our management, including the Chairman, President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, of the effectiveness of PNC's internal control over financial reporting as of December 31, 2022. This assessment was based on criteria for effective internal control over financial reporting described in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management concluded that PNC maintained effective internal control over financial reporting as of December 31, 2022.

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited our consolidated financial statements as of and for the year ended December 31, 2022 included in this Report, has also audited the effectiveness of PNC's internal control over financial reporting as of December 31, 2022. The report of PricewaterhouseCoopers LLP is included under Item 8 of this Report.

DISCLOSURE CONTROLS AND PROCEDURES AND CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

As of December 31, 2022, we performed an evaluation under the supervision and with the participation of our management, including the Chairman, President and Chief Executive Officer and the Executive Vice President and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures and of changes in our internal control over financial reporting.

Based on that evaluation, our Chairman, President and Chief Executive Officer and our Executive Vice President and Chief Financial Officer concluded that our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities and Exchange Act of 1934, as amended) were effective as of December 31, 2022, and that there has been no change in PNC's internal control over financial reporting that occurred during the fourth quarter of 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B – OTHER INFORMATION

None.

PART III

ITEM 10 – DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Certain of the information regarding our directors (or nominees for director), executive officers and Audit Committee (and Audit Committee financial experts), required by this item is included under the captions "Election of Directors (Item 1)," and "Corporate Governance – Board committees – Audit Committee," in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference.

Additional information regarding our executive officers is included in Part I of this Report under the caption "Information about our Executive Officers."

Information regarding our compliance with Section 16(a) of the Securities Exchange Act of 1934 is included, to the extent necessary, under the caption "Delinquent Section 16(a) Reports" in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference.

Certain information regarding our PNC Code of Business Conduct and Ethics required by this item is included under the captions "Corporate Governance – Our Code of Business Conduct and Ethics" and "Director and Executive Officer Relationships – Code of Business Conduct and Ethics" in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference. Our PNC Code of Business Conduct and Ethics is available on our corporate website at www.pnc.com/corporategovernance. In addition, any future amendments to, or waivers from, a provision of the PNC Code of Business Conduct and Ethics that applies to our directors or executive officers (including our principal executive officer, principal financial officer, and principal accounting officer or controller) will be posted at this internet address.

ITEM 11 – EXECUTIVE COMPENSATION

The information required by this item is included under the captions "Corporate Governance – Board committees – Human Resources Committee – Compensation committee interlocks and insider participation," "Director Compensation," "Compensation Discussion and Analysis," "Compensation Committee Report," "Compensation and Risk," "Compensation Tables," "Change in Control and Termination of Employment" and "CEO Pay Ratio" in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference. In accordance with Item 407(e)(5) of Regulation S-K, the information set forth under the caption "Compensation Committee Report" in such Proxy Statement will be deemed to be furnished in this Report and will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act as a result of furnishing the disclosure in this manner.

ITEM 12 – SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item regarding security ownership of certain beneficial owners and management is included under the caption "Security Ownership of Management and Certain Beneficial Owners" in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference.

Information regarding our compensation plans under which PNC equity securities are authorized for issuance as of December 31, 2022 is included in the table which follows. For additional information regarding these plans, see Note 18 Stock Based Compensation Plans.

Equity Compensation Plan Information
At December 31, 2022

	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights		(b) Weighted-average exercise price of outstanding options, warrants and rights (1)	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))	
Plan Category					
Equity compensation plans approved by security holders	4,324,886	(2)	$ 63.87	20,020,179	(3)
Equity compensation plans not approved by security holders					
Total	**4,324,886**		**$ 63.87**	**20,020,179**	

(1) – The weighted-average exercise price does not take into account restricted stock units or incentive performance units because they have no exercise price.

(2) – Of this total, the following amounts relate to the 2016 Incentive Award Plan (2016 Incentive Plan), approved by shareholders on April 26, 2016: 3,338,653 are stock-payable restricted stock units (at a maximum share award level), 871,648 are performance share units (at maximum share award level) and 59,658 are deferred stock units (at a maximum share award level). Also included in this total are the following amounts that relate to the 2006 Incentive Award Plan, as amended and restated (2006 Incentive Plan): 10,750 are stock options and 44,177 are stock-payable restricted stock units (at a maximum award level).

Following shareholder approval of the 2016 Incentive Plan, no further grants were permitted under the 2006 Incentive Plan, and the balance of shares authorized but unissued under the 2006 Incentive Plan were made available under the 2016 Incentive Plan.

(3) – Includes 1,786,148 shares available for issuance under the Employee Stock Purchase Plan, of which 106,038 shares are subject to purchase during the purchase period ending December 31, 2022. The amount available for awards under the 2016 Incentive Plan is 18,234,031.

ITEM 13 – CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item is included under the captions "Director and Executive Officer Relationships – Director independence, – Transactions with directors, – Family relationships, and – Indemnification and advancement of costs" and "Related Person Transactions" in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference.

ITEM 14 – PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is included under the caption "Ratification of Independent Registered Public Accounting Firm" in our Proxy Statement to be filed for the 2023 annual meeting of shareholders and is incorporated herein by reference.

PART IV

ITEM 15 – EXHIBITS, FINANCIAL STATEMENT SCHEDULES

Financial Statements, Financial Statement Schedules

Our consolidated financial statements required in response to this Item are incorporated by reference from Item 8 of this Report.

Exhibit Index

Exhibit No.	Description	Method of Filing +
2.1.1	Share Purchase Agreement, dated as of November 15, 2020, between Banco Bilbao Vizcaya Argentaria, S.A. and The PNC Financial Services Group, Inc.	Incorporated herein by reference to Exhibit 2.1 of the Corporation's Current Report on Form 8-K filed November 19, 2020
2.1.2	Amendment No. 1 to the Purchase Agreement	Incorporated herein by reference to Exhibit 2.1.2 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021
3.1.1	Amended and Restated Articles of Incorporation of the Corporation, effective January 2, 2009	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2008
3.1.2	Statement with Respect to Shares of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series O dated July 21, 2011	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed July 27, 2011
3.1.3	Statement with Respect to Shares of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series P dated April 19, 2012	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed April 24, 2012
3.1.4	Statement with Respect to Shares of 5.375% Non-Cumulative Perpetual Preferred Stock, Series Q dated September 14, 2012	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed September 21, 2012
3.1.5	Statement with Respect to Shares of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series R dated May 2, 2013	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed May 7, 2013
3.1.6	Amendment to Amended and Restated Articles of Incorporation of the Corporation, effective November 19, 2015	Incorporated herein by reference to Exhibit 3.1.6 of the Corporation's Current Report on Form 8-K filed November 20, 2015
3.1.7	Statement with Respect to Shares of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series S dated October 27, 2016	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed November 1, 2016
3.1.8	Statement with Respect to Shares of the 3.400% Fixed-Rate Reset Non-Cumulative Perpetual Preferred Stock, Series T	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed September 13, 2021
3.1.9	Statement with Respect to Shares of the 6.000% Fixed-Rate Reset Non-Cumulative Perpetual Preferred Stock, Series U	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed April 26, 2022
3.1.10	Statement with Respect to Shares of the 6.200% Fixed-Rate Reset Non-Cumulative Perpetual Preferred Stock, Series V	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed August 19, 2022
3.1.11	Statement with Respect to Shares of the 6.250% Fixed-Rate Reset Non-Cumulative Perpetual Preferred Stock, Series W	Incorporated herein by reference to Exhibit 3.1 of the Corporation's Current Report on Form 8-K filed February 7, 2023
3.2	Amended and Restated Bylaws of the Corporation effective February 10, 2022	Filed herewith

Exhibit No.	Description	Method of Filing +
4.1	There are no instruments with respect to long-term debt of the Corporation and its subsidiaries that involve a total amount of securities authorized thereunder that exceed 10 percent of the total assets of the Corporation and its subsidiaries on a consolidated basis. The Corporation agrees to provide the SEC with a copy of instruments defining the rights of holders of long-term debt of the Corporation and its subsidiaries on request.	
4.2	Deposit Agreement dated July 27, 2011, between the Corporation, Computershare Trust Company, N.A., Computershare Inc. and the holders from time to time of the Depositary Receipts representing interests in the Series O preferred stock	Incorporated herein by reference to Exhibit 4.2 of the Corporation's Current Report on Form 8-K filed July 27, 2011
4.3	Deposit Agreement, dated April 24, 2012, between the Corporation, Computershare Trust Company, N.A., Computershare Inc. and the holders from time to time of the Depositary Receipts representing interests in the Series P preferred stock	Incorporated herein by reference to Exhibit 4.2 of the Corporation's Current Report on Form 8-K filed April 24, 2012
4.4	Deposit Agreement, dated May 7, 2013, between the Corporation, Computershare Trust Company, N.A., Computershare Inc. and the holders from time to time of the Depositary Receipts representing interests in the Series R preferred stock	Incorporated herein by reference to Exhibit 4.2 of the Corporation's Current Report on Form 8-K filed May 7, 2013
4.5	Deposit Agreement, dated November 1, 2016, between the Corporation, Computershare Trust Company, N.A., Computershare Inc. and the holders from time to time of the Depositary Receipts representing interests in the Series S preferred stock	Incorporated herein by reference to Exhibit 4.2 of the Corporation's Current Report on Form 8-K filed November 1, 2016
4.6	Deposit Agreement, dated September 13, 2021, between the Corporation, Computershare Trust Company, N.A., Computershare Inc. and the holders from time to time of the Depositary Receipts representing interests in the Series T preferred stock	Incorporated herein by reference to Exhibit 4.1 of the Corporation's Current Report on Form 8-K filed September 13, 2021
4.7	Deposit Agreement, dated as of April 26, 2022, between the Corporation, Computershare Trust Company, N.A. and Computershare Inc., as depositary, and the holders from time to time of the Depositary Receipts representing interests in the Series U preferred stock	Incorporated herein by reference to Exhibit 4.1 of the Corporation's Current Report on Form 8-K filed April 26, 2022
4.8	Deposit Agreement, dated as of August 19, 2022, between the Corporation, Computershare Trust Company, N.A. and Computershare Inc., as depositary, and the holders from time to time of the Depositary Receipts representing interests in the Series V preferred stock	Incorporated herein by reference to Exhibit 4.1 of the Corporation's Current Report on Form 8-K filed August 19, 2022
4.9	Deposit Agreement, dated as of February 7, 2023, between the Corporation, Computershare Trust Company, N.A. and Computershare Inc., as depositary, and the holders from time to time of the Depositary Receipts representing interests in the Series W preferred stock	Incorporated herein by reference to Exhibit 4.1 of the Corporation's Current Report on Form 8-K filed February 7, 2023
4.10	Form of PNC Bank, National Association Subordinated Fixed Rate Global Bank Note issued prior to January 16, 2014	Incorporated herein by reference to Exhibit 4.11 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004
4.11.1	Issuing and Paying Agency Agreement, dated January 16, 2014, between PNC Bank, National Association and PNC Bank, National Association, relating to the $25 billion Global Bank Note Program for the Issue of Senior and Subordinated Bank Notes	Incorporated herein by reference to Exhibit 4.25 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013

Exhibit No.	Description	Method of Filing +
4.11.2	Amendment No. 1 to Issuing and Paying Agency Agreement, dated May 22, 2015, between PNC Bank, National Association and PNC Bank, National Association, relating to the $30 billion Global Bank Note Program for the Issue of Senior and Subordinated Bank Notes	Incorporated herein by reference to Exhibit 4.21.2 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015
4.11.3	Amendment No. 2 to Issuing and Paying Agency Agreement, dated May 27, 2016, between PNC Bank, National Association and PNC Bank, National Association, relating to the $40 billion Global Bank Note Program for the Issue of Senior and Subordinated Bank Notes	Incorporated herein by reference to Exhibit 4.20.3 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016
4.12	Forms of PNC Bank, National Association Senior Global Bank Notes issued after January 16, 2014 (included in Exhibit 4.11.1)	Incorporated herein by reference to Exhibit 4.25 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013
4.13	Forms of PNC Bank, National Association Subordinated Global Bank Notes issued on or after May 22, 2015 (included in Exhibit 4.11.2)	Incorporated herein by reference to Exhibit 4.21.2 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015
4.14	Description of the Corporation's Securities	Filed herewith
10.1.1	The Corporation's Supplemental Executive Retirement Plan, as amended and restated effective January 1, 2009	Incorporated herein by reference to Exhibit 10.2 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2008*
10.1.2	Amendment 2009-1 to the Corporation's Supplemental Executive Retirement Plan, as amended and restated effective January 1, 2009	Incorporated herein by reference to Exhibit 10.3 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2009*
10.1.3	Amendment 2013-1 to the Corporation's Supplemental Executive Retirement Plan, as amended and restated effective January 1, 2009	Incorporated herein by reference to Exhibit 10.1.3 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013*
10.2	The Corporation's ERISA Excess Pension Plan, as amended and restated effective January 1, 2023	Filed herewith*
10.3.1	The Corporation's Key Executive Equity Program, as amended and restated effective January 1, 2009	Incorporated herein by reference to Exhibit 10.6 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2008*
10.3.2	Amendment 2009-1 to the Corporation's Key Executive Equity Program, as amended and restated as of January 1, 2009	Incorporated herein by reference to Exhibit 10.9 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2009*
10.4.1	The Corporation's Supplemental Incentive Savings Plan, as amended and restated effective January 1, 2010	Incorporated herein by reference to Exhibit 10.17 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2011*
10.4.2	Amendment 2013-1 to the Corporation's Supplemental Incentive Savings Plan, as amended and restated effective January 1, 2010	Incorporated herein by reference to Exhibit 10.4.2 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013*
10.5.1	The Corporation and Affiliates Deferred Compensation Plan, as amended and restated May 5, 2009	Incorporated herein by reference to Exhibit 10.62 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009*
10.5.2	Amendment 2009-1 to the Corporation and Affiliates Deferred Compensation Plan, as amended and restated May 5, 2009	Incorporated herein by reference to Exhibit 10.17 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2009*
10.5.3	Amendment 2010-1 to the Corporation and Affiliates Deferred Compensation Plan, as amended and restated May 5, 2009	Incorporated herein by reference to Exhibit 10.20 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2010*
10.5.4	Amendment 2011-1 to the Corporation and Affiliates Deferred Compensation Plan, as amended and restated May 5, 2009	Incorporated herein by reference to Exhibit 10.23 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2011*

Exhibit No.	Description	Method of Filing +
10.5.5	Amendment 2012-1 to the Corporation and Affiliates Deferred Compensation Plan, as amended and restated May 5, 2009	Incorporated herein by reference to Exhibit 10.24 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2012*
10.5.6	Amendment 2013-1 to the Corporation and Affiliates Deferred Compensation Plan, as amended and restated May 5, 2009	Incorporated herein by reference to Exhibit 10.5.6 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013*
10.6.1	The Corporation and Affiliates Deferred Compensation and Incentive Plan, as amended and restated effective January 1, 2020	Incorporated herein by reference to Exhibit 10.6.3 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2019*
10.6.2	Amendment 2021-1 to the Corporation and Affiliates Deferred Compensation and Incentive Plan, as amended and restated effective January 1, 2020	Incorporated herein by reference to Exhibit 10.6.1 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021*
10.6.3	Amendment 2021-2 to the Corporation and Affiliates Deferred Compensation and Incentive Plan, as amended and restated effective January 1, 2020	Incorporated herein by reference to Exhibit 10.6.3 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2021*
10.7	The PNC Financial Services Group, Inc. 2016 Incentive Award Plan	Incorporated herein by reference to Exhibit 99.1 of the Corporation's Form S-8 (File No. 333-210995) filed April 29, 2016*
10.8.1	The Corporation's 2006 Incentive Award Plan, as amended and restated effective as of March 11, 2011	Incorporated herein by reference to Exhibit 10.70 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2011*
10.8.2	Addendum to the Corporation's 2006 Incentive Award Plan, effective as of January 26, 2012	Incorporated herein by reference to Exhibit 10.28 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2011*
10.9	The Corporation's Directors Deferred Compensation Plan, as amended and restated effective January 1, 2015	Incorporated herein by reference to Exhibit 10.52 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014*
10.10	The Corporation's 2016 Incentive Award Plan Directors Deferred Stock Unit Program effective January 1, 2017	Incorporated herein by reference to Exhibit 10.16 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2016*
10.11	Trust Agreement between the Corporation, as settlor, and Matrix Trust Company, as trustee	Incorporated herein by reference to Exhibit 10.15 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017*
10.12	Trust Agreement between PNC Investment Corp., as settlor, and PNC Bank, National Association, as trustee	Incorporated herein by reference to Exhibit 10.34 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005*
10.13	Certificate of Corporate Action for Grantor Trusts effective January 1, 2012	Incorporated herein by reference to Exhibit 10.37 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2011*
10.14	Certificate of Corporate Action for Grantor Trusts effective December 1, 2021	Incorporated herein by reference to Exhibit 10.14 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2021*
10.15	The Corporation's Employee Stock Purchase Plan, as amended and restated as of January 1, 2020	Incorporated herein by reference to Exhibit 4.4 of the Corporation's Form S-8 (File No. 333-238049) filed May 6, 2020*
10.16	2013 forms of employee stock option and restricted share unit agreements	Incorporated herein by reference to Exhibit 10.64 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2012*
10.17	Additional 2013 forms of employee stock option, performance unit, restricted stock and restricted share unit agreements	Incorporated herein by reference to Exhibit 10.82 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013*

Exhibit No.	Description	Method of Filing +
10.18	2020 Form of Performance Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.39 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020*
10.19	2020 Form of Restricted Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.40 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020*
10.20	2020 Form of Restricted Share Units Award Agreement - Senior Leader Program	Incorporated herein by reference to Exhibit 10.41 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020*
10.21	2021 Form of Performance Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.26 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2021*
10.22	2021 Form of Restricted Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.36 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2021*
10.23	2021 Form of Restricted Share Units Award Agreement – Senior Leader Program	Incorporated herein by reference to Exhibit 10.37 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021*
10.24	2022 Form of Performance Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.34 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2022*
10.25	2022 Form of Restricted Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.35 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2022*
10.26	2022 Form of Restricted Share Units Award Agreement – Senior Leader Program	Incorporated herein by reference to Exhibit 10.36 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2022*
10.27	2022 Form of Performance Restricted Share Units Award Agreement	Incorporated herein by reference to Exhibit 10.37 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2022*
10.28	Form of Time Sharing Agreement between the Corporation and certain executives	Incorporated herein by reference to Exhibit 10.33 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022*
10.29	Form of change of control employment agreements	Incorporated herein by reference to Exhibit 10.51 of the Corporation's Current Report on Form 8-K filed August 16, 2016*
10.30.1	The National City Corporation 2004 Deferred Compensation Plan, as amended and restated effective January 1, 2005	Incorporated herein by reference to Exhibit 10.35 of National City Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2006*
10.30.2	Amendment to The National City Corporation 2004 Deferred Compensation Plan, as amended and restated effective January 1, 2005	Incorporated herein by reference to Exhibit 10.56 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2010*
10.31.1	Distribution Agreement, dated January 16, 2014, between PNC Bank, National Association and the Dealers named therein, relating to the $25 billion Global Bank Note Program for the Issue of Senior and Subordinated Bank Notes	Incorporated by reference to Exhibit 10.47 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2014
10.31.2	Amendment No. 1 to Distribution Agreement, dated May 22, 2015, between PNC Bank, National Association and the Dealers named therein, relating to the $30 billion Global Bank Note Program for the Issue of Senior and Subordinated Bank Notes	Incorporated herein by reference to Exhibit 10.47.2 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015

Exhibit No.	Description	Method of Filing +
10.31.3	Amendment No. 2 to Distribution Agreement, dated May 27, 2016, between PNC Bank, National Association and the Dealers named therein, relating to the $40 billion Global Bank Note Program for the Issue of Senior and Subordinated Bank Notes	Incorporated herein by reference to Exhibit 10.48.3 of the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016
21	Schedule of Certain Subsidiaries of the Corporation	Filed herewith
22	Subsidiary Issuers of Guaranteed Securities	Filed herewith
23.1	Consent of PricewaterhouseCoopers LLP, the Corporation's Independent Registered Public Accounting Firm	Filed herewith
24	Powers of Attorney	Filed herewith
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350	Furnished herewith
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350	Furnished herewith
101.INS	Inline XBRL Instance Document	Filed herewith**
101.SCH	Inline XBRL Taxonomy Extension Schema Document	Filed herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	Filed herewith
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	Filed herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	Filed herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	Filed herewith
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)	

\+ Incorporated document references to filings by the Corporation are to SEC File No. 001-09718, and to filings by National City Corporation are to SEC File No. 001-10074.

* Denotes management contract or compensatory plan.

** The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL.

You can obtain copies of these Exhibits electronically at the SEC's website at www.sec.gov. The Exhibits are also available as part of this Form 10-K on PNC's corporate website at www.pnc.com/secfilings. Shareholders and bondholders may also obtain copies of Exhibits, without charge, by contacting Shareholder Relations at 800-843-2206 or via e-mail at investor.relations@pnc.com. The Interactive Data File (XBRL) exhibit is only available electronically.

ITEM 16 – FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

The PNC Financial Services Group, Inc.
(Registrant)

By: /s/ Robert Q. Reilly
Robert Q. Reilly
Executive Vice President and Chief Financial Officer
February 22, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of The PNC Financial Services Group, Inc. and in the capacities indicated on February 22, 2023.

Signature	Capacities
/s/ William S. Demchak William S. Demchak	Chairman, President, Chief Executive Officer and Director (Principal Executive Officer)
/s/ Robert Q. Reilly Robert Q. Reilly	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Gregory H. Kozich Gregory H. Kozich	Senior Vice President and Controller (Principal Accounting Officer)
* Joseph Alvarado; Debra A. Cafaro; Marjorie Rodgers Cheshire; Andrew T. Feldstein; Richard J. Harshman; Daniel R. Hesse; Renu Khator, Linda R. Medler, Robert A. Niblock, Martin Pfinsgraff; Bryan Salesky, Toni Townes-Whitley; Michael J. Ward	Directors

*By: /s/ Laura Gleason
Laura Gleason, Attorney-in-Fact,
pursuant to Powers of Attorney filed herewith

EXHIBIT 31.1

In accordance with Exchange Act Rules 13a-14(f) and 15d-14(f), this certification does not relate to Interactive Data Files as defined in Rule 11 of Regulation S-T.

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, William S. Demchak, certify that:

1. I have reviewed this Annual Report on Form 10-K for the year ended December 31, 2022 of The PNC Financial Services Group, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

/s/ William S. Demchak

William S. Demchak
Chairman, President and Chief Executive Officer

EXHIBIT 31.2

In accordance with Exchange Act Rules 13a-14(f) and 15d-14(f), this certification does not relate to Interactive Data Files as defined in Rule 11 of Regulation S-T.

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Robert Q. Reilly, certify that:

1. I have reviewed this Annual Report on Form 10-K for the year ended December 31, 2022 of The PNC Financial Services Group, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2023

/s/ Robert Q. Reilly

Robert Q. Reilly
Executive Vice President and Chief Financial Officer

EXHIBIT 32.1

In accordance with Exchange Act Rules 13a-14(f) and 15d-14(f), this certification does not relate to Interactive Data Files as defined in Rule 11 of Regulation S-T.

CERTIFICATION BY CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K for the year ended December 31, 2022 of The PNC Financial Services Group, Inc. (Corporation) as filed with the Securities and Exchange Commission on the date hereof (Report), I, William S. Demchak, Chairman, President and Chief Executive Officer of the Corporation, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge, that:

(1) The Report fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation for the dates and periods covered by the Report.

This certificate is being made for the exclusive purpose of compliance by the Chief Executive Officer of the Corporation with the requirements of Section 906 of the Sarbanes-Oxley Act of 2002, and may not be used by any person or for any reason other than as specifically required by law.

/s/ William S. Demchak

William S. Demchak
Chairman, President and Chief Executive Officer

February 22, 2023

EXHIBIT 32.2

In accordance with Exchange Act Rules 13a-14(f) and 15d-14(f), this certification does not relate to Interactive Data Files as defined in Rule 11 of Regulation S-T.

CERTIFICATION BY CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K for the year ended December 31, 2022 of The PNC Financial Services Group, Inc. (Corporation) as filed with the Securities and Exchange Commission on the date hereof (Report), I, Robert Q. Reilly, Executive Vice President and Chief Financial Officer of the Corporation, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge, that:

(1) The Report fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation for the dates and periods covered by the Report.

This certificate is being made for the exclusive purpose of compliance by the Chief Financial Officer of the Corporation with the requirements of Section 906 of the Sarbanes-Oxley Act of 2002, and may not be used by any person or for any reason other than as specifically required by law.

/s/ Robert Q. Reilly

Robert Q. Reilly
Executive Vice President and Chief Financial Officer

February 22, 2023