Northern Trust

Annual Report on Form 10-K

For the Year Ended December 31, 2020

CONSOLIDATED FINANCIAL HIGHLIGHTS

	2020	2019	PERCENT CHANGE[1]
For the Year Ended December 31 ($ in millions)			
Revenues (Fully Taxable Equivalent Basis[2])	$ 6,135.2	$ 6,105.9	—%
Net Income	1,209.3	1,492.2	(19)
Dividends Declared on Common Stock	592.0	565.9	5
Dividends Declared on Preferred Stock[3]	56.2	46.4	21
Per Common Share			
Net Income — Basic	$ 5.48	$ 6.66	(18)%
Net Income — Diluted	5.46	6.63	(18)
Cash Dividends Declared per Common Share	2.80	2.60	8
Book Value — End of Period	51.87	46.82	11
Market Value — End of Period	93.14	106.24	(12)
At Year-End ($ in millions)			
Earning Assets	$ 158,531.6	$ 125,236.6	27%
Total Assets	170,003.9	136,828.4	24
Deposits	143,878.0	109,120.6	32
Stockholders' Equity	11,688.3	11,091.0	5
Average Balances ($ in millions)			
Earning Assets	$ 124,132.9	$ 107,109.4	16%
Total Assets	136,811.1	117,551.4	16
Deposits	108,511.1	89,786.0	21
Stockholders' Equity	11,192.6	10,648.4	5
Client Assets at Year-End ($ in billions)			
Assets Under Custody / Administration	$ 14,532.5	$ 12,050.4	21%
Assets Under Custody	11,262.8	9,233.5	22
Global Custody Assets	7,424.5	5,894.6	26
Assets Under Management	1,405.3	1,231.3	14
Financial Ratios and Metrics			
Return on Average Common Equity	11.2%	14.9%	
Return on Average Assets	0.88	1.27	
Dividend Payout Ratio	51.3	39.2	
Net Interest Margin (Fully Taxable Equivalent Basis[2])	1.19	1.60	

	DECEMBER 31, 2020		DECEMBER 31, 2019	
CAPITAL RATIOS	Standardized Approach	Advanced Approach	Standardized Approach	Advanced Approach
Common Equity Tier 1 Capital	12.8%	13.4%	12.7%	13.2%
Tier 1 Capital	13.9	14.5	14.5	15.0
Total Capital	15.6	15.9	16.3	16.8
Tier 1 Leverage	7.6	7.6	8.7	8.7
Supplementary Leverage	N/A	8.6	N/A	7.6

1 Percentage change calculations are based on actual balances rather than the rounded amounts presented.

2 Revenues and Net Interest Margin are presented on a fully taxable equivalent basis, a non-generally accepted accounting principle financial measure that facilitates the analysis of asset yields. A reconciliation of these measures prepared in accordance with GAAP to those presented on a fully taxable equivalent basis is available in the enclosed Annual Report on Form 10-K for the year ended December 31, 2020.

3 Dividends on Preferred Stock in 2020 includes $11.5 million related to the difference between the redemption amount of the Corporation's Series C Non-Cumulative Perpetual Preferred Stock, which was redeemed in the first quarter of 2020, and its carrying value.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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, 2020

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 No. 001-36609

NORTHERN TRUST CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	36-2723087
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
50 South La Salle Street Chicago, Illinois	60603
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (312) 630-6000

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

Title of Each Class	Trading Symbol	Name of Each Exchange On Which Registered
Common Stock, $1.66 2/3 Par Value	NTRS	The NASDAQ Stock Market LLC
Depositary Shares, each representing 1/1,000th interest in a share of Series E Non-Cumulative Perpetual Preferred Stock	NTRSO	The NASDAQ Stock Market LLC

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T 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. ☒

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

The aggregate market value of the registrant's common stock as of June 30, 2020 (the last business day of the registrant's most recently completed second quarter), based upon the last sale price of the common stock at June 30, 2020 as reported by The NASDAQ Stock Market LLC, held by non-affiliates was approximately $16.4 billion. Determination of stock ownership by non-affiliates was made solely for the purpose of responding to this requirement and the registrant is not bound by this determination for any other purpose.

At January 31, 2021, 208,314,381 shares of common stock, $1.66 2/3 par value, were outstanding.

Portions of the registrant's Proxy Statement for its 2021 Annual Meeting of Stockholders are incorporated by reference into Part III hereof.

NORTHERN TRUST CORPORATION
FORM 10-K
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

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PART I

ITEM 1 – BUSINESS

Northern Trust Corporation

Northern Trust Corporation (Corporation) is a leading provider of wealth management, asset servicing, asset management and banking solutions to corporations, institutions, families and individuals. The Corporation is a financial holding company conducting business through various U.S. and non-U.S. subsidiaries, including The Northern Trust Company (Bank).

The Bank is an Illinois banking corporation headquartered in Chicago and the Corporation's principal subsidiary. Founded in 1889, the Bank conducts its business through its U.S. operations and its various U.S. and non-U.S. branches and subsidiaries. At December 31, 2020, the Bank had consolidated assets of $169.6 billion and common bank equity capital of $10.8 billion.

The Corporation was formed as a holding company for the Bank in 1971. The Corporation has a network of offices in 22 U.S. states and Washington, D.C., and across 22 locations in Canada, Europe, the Middle East and the Asia-Pacific region. At December 31, 2020, the Corporation had consolidated total assets of $170.0 billion and stockholders' equity of $11.7 billion.

The Corporation expects that the Bank will continue in the foreseeable future to be the major source of the Corporation's consolidated assets, revenues, and net income. Except where the context otherwise requires, references to "Northern Trust," "we," "us," "our," "its," or similar terms mean Northern Trust Corporation and its subsidiaries on a consolidated basis.

Business Overview

Northern Trust focuses on managing and servicing client assets through its two client-focused reporting segments: Corporate & Institutional Services (C&IS) and Wealth Management. Asset management and related services are provided to C&IS and Wealth Management clients primarily by the Asset Management business. The revenue and expenses of Asset Management and certain other support functions are allocated fully to C&IS and Wealth Management. Northern Trust reports certain income and expense items not allocated to C&IS and Wealth Management in a third reporting segment, Treasury and Other.

CORPORATE & INSTITUTIONAL SERVICES

C&IS is a leading global provider of asset servicing and related services to corporate and public retirement funds, foundations, endowments, fund managers, insurance companies, sovereign wealth funds, and other institutional investors around the globe. Asset servicing and related services encompass a full range of capabilities including, but not limited to: custody; fund administration; investment operations outsourcing; investment management; investment risk and analytical services; employee benefit services; securities lending; foreign exchange; treasury management; brokerage services; transition management services; banking; and cash management. Client relationships are managed through the Bank and the Bank's and the Corporation's other subsidiaries, including support from locations in North America, Europe, the Middle East, and the Asia-Pacific region. At December 31, 2020, total C&IS assets under custody/administration, assets under custody, and assets under management were $13.65 trillion, $10.39 trillion, and $1.06 trillion, respectively.

WEALTH MANAGEMENT

Wealth Management focuses on high-net-worth individuals and families, business owners, executives, professionals, retirees, and established privately-held businesses in its target markets. The business also includes the Global Family Office, which provides customized services to meet the complex financial needs of individuals and family offices in the United States and throughout the world with assets typically exceeding $200 million. In supporting these targeted segments, Wealth Management provides trust, investment management, custody, and philanthropic services; financial consulting; guardianship and estate administration; family business consulting; family financial education; brokerage services; and private and business banking.

Wealth Management is one of the largest providers of advisory services in the United States, with assets under custody/administration, assets under custody, and assets under management of $879.4 billion, $875.1 billion, and $347.8 billion, respectively, at December 31, 2020. Wealth Management services are delivered by multidisciplinary teams through a network of offices in 19 U.S. states and Washington, D.C., as well as offices in London, Guernsey, and Abu Dhabi.

ASSET MANAGEMENT

Asset Management, through the Corporation's various subsidiaries, supports the C&IS and Wealth Management reporting segments by providing a broad range of asset management and related services and other products to clients around the world. Investment solutions are delivered through separately managed accounts, bank common and collective funds, registered investment companies, exchange traded funds, non-U.S. collective investment funds, and unregistered private investment funds. Asset Management's capabilities include active and passive equity; active and passive fixed income; cash management; multi-asset and alternative asset classes (such as private equity and hedge funds of funds); and multi-manager advisory services and products. Asset Management's activities also include overlay services and other risk management services. Asset Management operates internationally through subsidiaries and distribution arrangements and its revenue and expense are fully allocated to C&IS and Wealth Management. As discussed above, Northern Trust managed $1.41 trillion in assets as of December 31, 2020, including $1.06 trillion for C&IS clients and $347.8 billion for Wealth Management clients.

Competition

Northern Trust faces intense competition in all aspects and areas of its business. Competition comes from both regulated and unregulated financial services organizations, whose products and services span the local, national, and global markets in which Northern Trust conducts operations. Our competitors include a broad range of financial institutions and service companies, including other custodial banks, deposit-taking institutions, asset management firms, benefits consultants, trust companies, investment banking firms, insurance companies, investment counseling firms, and various financial technology companies, including software providers and data services firms. As our businesses grow and markets evolve, we may encounter increasing and new forms of competition around the world.

Northern Trust's business strategy is to provide quality financial services to targeted market segments in which it believes it has a competitive advantage and favorable growth prospects. As part of this strategy, Northern Trust seeks to differentiate itself from its competitors with premier, holistic solutions and exceptional experiences tailored to meet clients' needs. In addition, Northern Trust emphasizes the development and growth of recurring sources of fee-based income and continual productivity improvements. Northern Trust also seeks to maintain its foundational strength with a strong, conservative balance sheet and a globally respected brand.

Economic Conditions And Government Policies

The earnings of Northern Trust are affected by numerous external influences. Chief among these are general economic conditions, both domestic and international, and actions that governments and their central banks take in managing their economies. These general conditions affect all of Northern Trust's businesses, as well as the quality, value, and profitability of its loan and investment portfolios.

The Board of Governors of the Federal Reserve System (Federal Reserve Board) implements monetary policy through its open market operations in United States Government securities, its setting of the discount rate at which member banks may borrow from Federal Reserve Banks, and its changes in the reserve requirements for deposits. The policies adopted by the Federal Reserve Board directly affect interest rates and therefore what banks earn on their loans and investments and what they pay on their savings and time deposits and other purchased funds.

Supervision and Regulation

Northern Trust is subject to extensive regulation under state and federal laws in the United States and in each of the jurisdictions in which it does business. The discussion below outlines significant elements of selected laws and regulations applicable to Northern Trust. Changes in laws or regulations applicable to Northern Trust may have a material effect on its businesses and results of operations.

FINANCIAL HOLDING COMPANY REGULATION

Under U.S. law, the Corporation is a bank holding company that has elected to be a financial holding company subject to the supervision, examination, and regulation of the Federal Reserve Board. A financial holding company is permitted to engage in a broader range of financial activities than a bank holding company. To maintain the Corporation's status as a financial holding company, the Bank and the Corporation must remain "well-capitalized" and "well-managed," and the Bank must have received at least a "satisfactory" rating in its most recent Community Reinvestment Act (CRA) examination. Failure to meet one or more of these requirements may result in restrictions on the Corporation's ability to exercise powers granted to financial holding companies, to engage in new activities, to continue current activities, or to make acquisitions.

SUBSIDIARY REGULATION

The Bank is a member of the Federal Reserve System, with deposits insured by the Federal Deposit Insurance Corporation (FDIC), and is subject to regulation by both agencies. As an Illinois banking corporation, the Bank is also subject to Illinois state laws and regulations and to examination and supervision by the Division of Banking of the Illinois Department of Financial and Professional Regulation. The Bank is also registered as a transfer agent with the Federal Reserve Board and is registered provisionally as a swap dealer with the U.S. Commodity Futures Trading Commission

(CFTC) under the Commodity Exchange Act. As a result, the Bank is subject to supervision, examination and enforcement by certain other regulatory bodies, including the CFTC and the National Futures Association (NFA).

The Corporation's nonbanking affiliates are subject to examination by the Federal Reserve Board and, in certain circumstances, other functional regulators. The Corporation's broker-dealer subsidiary is a member of the Financial Industry Regulatory Authority (FINRA), is registered with the U.S. Securities and Exchange Commission (SEC) as a broker-dealer, investment adviser, and municipal securities dealer, and is subject to the rules and regulations of these bodies. Certain nonbanking affiliates are registered with the CFTC as commodity trading advisors and commodity pool operators and subject to supervision and regulation by the CFTC and NFA. Other subsidiaries of the Corporation are registered with the SEC as investment advisers and are subject to regulation by the SEC. Subsidiaries may also be regulated by state regulators in various states.

THE DODD-FRANK ACT, AS AMENDED

The following items provide a brief description of certain provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), as implemented through final rules promulgated by the Federal Reserve Board and other agencies and amended by the Economic Growth, Regulatory Relief, and Consumer Protection Act (the Regulatory Relief Act), most relevant to the Corporation and its subsidiaries, including the Bank.

Enhanced Prudential Standards. The Dodd-Frank Act, as implemented by the Federal Reserve Board through various rulemakings and amended by the Regulatory Relief Act, generally imposes enhanced prudential requirements on U.S. bank holding companies with at least $100 billion in total consolidated assets, including the Corporation. The enhanced prudential standards include more stringent risk-based capital, leverage, liquidity, risk management, and stress testing requirements and single counterparty credit limits for large bank holding companies, including the Corporation. The Federal Reserve Board also has the discretion to require these large U.S. bank holding companies to limit their short-term debt, to issue contingent capital instruments, and to provide enhanced public disclosures.

In October 2019, the Federal Reserve Board finalized a proposed rule implementing changes made by the Regulatory Relief Act. This rule introduced a new four-category framework to determine which enhanced prudential standards and other requirements are applicable to institutions with total consolidated assets of at least $100 billion, based on asset thresholds and other risk-based factors. Under the new rules, the Corporation is classified as a Category II institution.

The requirements under the new framework that apply to the Corporation are largely unchanged as a result of the Federal Reserve Board's final tailoring rule for enhanced prudential standards. The Corporation must submit annual capital plans to the Federal Reserve Board, conduct supervisory and internal periodic stress tests to evaluate capital adequacy in adverse economic conditions, maintain enhanced risk management procedures, comply with a liquidity risk management framework (discussed below in "Liquidity Standards") and aggregate credit exposure limits, conduct liquidity stress tests, and hold a buffer of liquid assets estimated to meet funding needs during a financial stress event. The Corporation is not subject to the total loss-absorbing capacity requirement, capital surcharge, enhanced supplementary leverage ratio, or aggregate credit exposure limit that apply to U.S. bank holding companies that are global systemically important bank holding companies.

Resolution Planning. As required by Section 165(d) of the Dodd-Frank Act, the Corporation is required to submit periodically to regulators a resolution plan for its rapid and orderly resolution in the event of material financial distress or failure. In addition, under an FDIC rule (the CIDI Resolution Plan Rule) the Bank must submit to the FDIC periodic plans for resolution in the event of its failure.

On March 29, 2019, the Federal Reserve Board and the FDIC provided joint written feedback to the Corporation regarding the resolution plan submitted by the Corporation in December 2017, pursuant to Section 165(d) of the Dodd-Frank Act (the 2017 165(d) Plan). The joint written feedback stated that the Federal Reserve Board and FDIC did not identify shortcomings or deficiencies in the 2017 165(d) Plan. The Corporation is required to submit its next Section 165(d) resolution plan by December 17, 2021, and it must address the informational content specified in a guidance letter issued by the Federal Reserve Board and FDIC in December 2020.

In addition, on June 27, 2018, the Bank submitted its resolution plan (the 2018 CIDI Plan) to the FDIC under the CIDI Resolution Plan Rule. To date, no formal written feedback or guidance has been received regarding the 2018 CIDI Plan. On January 19, 2021, the FDIC announced that it will resume requiring resolution plan submissions for insured depository institutions with $100 billion or more in assets. The FDIC announcement indicated that no firm will be required to submit a resolution plan without at least 12 months advance notice provided to the firm. To date, the Bank has not received notice from the FDIC indicating its next resolution plan submission date.

Separately, the European Union Bank Recovery and Resolution Directive (BRRD), was adopted for European Union credit institutions, including certain of the Bank's subsidiaries and branches, effective January 1, 2015. In accordance with applicable Commission de Surveillance du Secteur Financier (CSSF) guidance, a Simplified Recovery Plan for Northern Trust Global Services SE, a Luxembourg-registered indirect subsidiary of the Bank, has been established and will be reviewed and filed with the CSSF at least biennially. CSSF regulations also require institutions to submit resolution-related data on an annual basis, a requirement for which Northern Trust Global Services SE has an established process.

Orderly Liquidation Authority. Under the Dodd-Frank Act, certain financial companies, such as the Corporation and certain of its covered subsidiaries, can be subjected to an orderly liquidation authority if in default or danger of default and their resolution under the U.S. Bankruptcy Code would have serious adverse effects on financial stability in the United States, among other requirements set by statute. If the Corporation were subject to orderly liquidation authority, the FDIC would be appointed as its receiver, which would give the FDIC considerable powers to resolve the Corporation. Absent such actions, the Corporation, as a bank holding company, would remain subject to the U.S. Bankruptcy Code.

The Volcker Rule. The Volcker Rule bans proprietary trading subject to exceptions for market-making, hedging, certain trading activities in U.S. and foreign sovereign debt, certain trading activities of non-U.S. banking entities trading outside the United States, certain customer-driven matched swaps, and trading activities related to liquidity management. The Volcker Rule also imposes significant restrictions on sponsoring or investing in certain "covered funds," such as hedge funds or private equity funds, again subject to exceptions. Northern Trust maintains an enterprise-wide compliance program to comply with the Volcker Rule.

Swaps and Other Derivatives. The Dodd-Frank Act imposed a regulatory structure on the over-the-counter derivatives market, including requirements for clearing, exchange trading, capital, margin, trade reporting, and recordkeeping. The Dodd-Frank Act also requires certain entities to register as a "major swap participant," a "swap dealer," a "major-security-based swap participant" or a "security-based swap dealer." The Bank is required to register as a swap dealer and its swap dealer activities are subject to the CFTC's rules and regulations, including rules regarding internal and external business conduct standards, reporting and recordkeeping, mandatory clearing for certain swaps, trade documentation and confirmation requirements, and cross-border swap activities. The Bank is also subject to Federal Reserve Board regulations regarding mandatory posting and collection of margin by certain swap counterparties. Several of the SEC's requirements for security-based swap dealers came into effect on April 6, 2020. Under those requirements, persons or entities must begin counting security-based swap activities on August 6, 2021, and may be required to register with the SEC as a security-based swap dealer after October 6, 2021. The Corporation does not expect that it, or any of its affiliates, will be required to register as a security-based swap dealer with the SEC.

HOLDING COMPANY SUPPORT UNDER THE FEDERAL DEPOSIT INSURANCE ACT

The Dodd-Frank Act amended the Federal Deposit Insurance Act (FDIA) to obligate the Federal Reserve Board to require bank holding companies, such as the Corporation, to serve as a source of financial and managerial strength for any subsidiary depository institution. Under this requirement, the Corporation in the future could be required to provide financial assistance to the Bank should the Bank experience financial distress.

PAYMENT OF DIVIDENDS

The Corporation may pay dividends, repurchase stock, and make other capital distributions only in accordance with the capital plan rules and capital adequacy standards of the Federal Reserve Board, including the stress capital buffer requirement, discussed further at "—Capital Adequacy Requirements" below. Dividends from the Bank are a significant source of funds for the Corporation, and the Corporation's ability to pay dividends on its common stock therefore depends on the ability of the Bank to pay sufficient dividends to the Corporation.

Various other federal and state laws and regulations limit the amount of dividends that may be paid by the Bank to the Corporation without regulatory consent. The Bank may not pay any dividends if it is undercapitalized, or if the payment of the dividend would cause it to become undercapitalized. In general, the amount of dividends that may be paid in a calendar year is limited to its "recent earnings" (the current year's net income combined with the retained net income of the two preceding years), or its "undivided profits" (generally, accumulated net profits that have not been paid out as dividends or transferred to surplus), whichever is less. The ability of the Bank to pay dividends to the Corporation may also be affected by the capital adequacy standards applicable to the Bank (discussed further below), which include minimum requirements and buffers.

CAPITAL PLANNING AND STRESS TESTING

The Corporation's capital distributions are subject to the Federal Reserve Board's capital plan rules, which require the Corporation to submit annual capital plans to the Federal Reserve Board for review.

The major components of that oversight are the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act stress tests (DFAST). These requirements involve both company-run and supervisory-run testing of capital under various scenarios, including baseline and severely adverse scenarios provided by the appropriate banking regulator. Results from the Corporation's and the Bank's annual company-run stress tests are reported to the appropriate regulators and made publicly available.

The Corporation submitted its capital plan for the Federal Reserve Board's 2020 CCAR exercise in April 2020 and, in November 2020, resubmitted the plan at the Federal Reserve Board's request to reflect stresses from the COVID-19 pandemic. On June 25, 2020, the Federal Reserve Board imposed restrictions that were designed to cause large bank holding companies to preserve capital, including suspending share repurchases, capping dividend payments, and only allowing common stock dividends according to a formula based on recent income. On December 18, 2020, the Federal Reserve Board extended a portion of these restrictions to limit share repurchases and dividend payments based on recent income. These restrictions apply for the first quarter of 2021 and may be extended further.

Under the DFAST regulations, the Corporation is required to undergo regulatory stress tests conducted by the Federal Reserve Board annually. The Bank also is required to conduct its own annual internal stress test (although it is permitted to combine certain reporting and disclosure of its stress test results with the results of the Corporation). Results from the Corporation's and the Bank's annual company-run stress tests are reported to the appropriate regulators and made publicly available. Northern Trust published the results of its company-run stress tests on June 25, 2020.

CAPITAL ADEQUACY REQUIREMENTS

The Corporation, as a bank holding company, is subject to risk-based and leverage capital guidelines implemented by the Federal Reserve Board that are based on industry-standard guidelines published by the International Basel Committee on Banking Supervision (Basel Committee), known as Basel III. The Bank, as an FDIC-insured depository institution, is also required to meet risk-based and leverage capital guidelines established by regulators which are generally similar to those established by the Federal Reserve Board for bank holding companies.

Under the final Basel III rules, the Corporation, with the Bank, is a "core" banking organization that is required to use the advanced approaches methodologies to calculate and disclose publicly its risk-based capital ratios. The Corporation also is subject to a capital floor that is based on the Basel III standardized approach to calculating risk-based capital ratios. The Corporation is therefore required to calculate its risk-based capital ratios under both the standardized and advanced approaches, and is subject to the more stringent of the two in the assessment of its capital adequacy.

The Bank's risk-based and leverage capital ratios at December 31, 2020, were well above the regulatory requirements established by U.S. banking regulators. The risk-based and leverage capital ratios for the Corporation and the Bank, together with the regulatory minimum ratios and the ratios required for classification as "well-capitalized," are provided in the following chart.

TABLE 1: RISK-BASED AND LEVERAGE CAPITAL RATIOS AS OF DECEMBER 31, 2020

	COMMON EQUITY TIER 1 CAPITAL		TIER 1 CAPITAL		TOTAL CAPITAL		TIER 1 LEVERAGE		SUPPLEMENTARY LEVERAGE[1]
	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	ADVANCED APPROACH
Northern Trust Corporation	12.8 %	13.4 %	13.9 %	14.5 %	15.6 %	15.9 %	7.6 %	7.6 %	8.6 %
The Northern Trust Company	13.0 %	13.8 %	13.0 %	13.8 %	14.5 %	15.0 %	7.0 %	7.0 %	7.7 %
Minimum required ratio	4.5 %	4.5 %	6.0 %	6.0 %	8.0 %	8.0 %	4.0 %	4.0 %	3.0 %
"Well-capitalized" minimum ratios, as applicable									
Northern Trust Corporation	N/A	N/A	6.0 %	6.0 %	10.0 %	10.0 %	N/A	N/A	N/A
The Northern Trust Company	6.5 %	6.5 %	8.0 %	8.0 %	10.0 %	10.0 %	5.0 %	5.0 %	3.0 %

(1) In November 2019, the Federal Reserve and other U.S. federal banking agencies adopted a final rule that established a deduction for central bank deposits from the total leverage exposures of custodial banking organizations, including Northern Trust Corporation and The Northern Trust Company, equal to the lesser of (i) the total amount of funds the custodial banking organization and its consolidated subsidiaries have on deposit at qualifying central banks and (ii) the total amount of client funds on deposit at the custodial banking organization that are linked to fiduciary or custodial and safekeeping accounts. The rule became effective on April 1, 2020.

Further, on April 1, 2020, the Federal Reserve issued an interim final rule that requires bank holding companies, including Northern Trust Corporation, to deduct, on a temporary basis, deposits with the Federal Reserve and investments in U.S. Treasury securities from their total leverage exposure. The U.S. Treasury securities deduction is applied in addition to the central bank deposits relief referred to above. This rule became effective on April 1, 2020 and will remain in effect through the first quarter of 2021. On May 15, 2020, the U.S. federal banking agencies released an interim final rule that permits insured depository institutions of bank holding companies also to temporarily exclude deposits with the Federal Reserve and investments in U.S. Treasury securities from their total leverage exposure. The Northern Trust Company did not elect to take this deduction.

The supplementary leverage ratios at December 31, 2020 for the Northern Trust Corporation and The Northern Trust Company reflect the impact of these final rules.

Advanced approaches institutions, such as the Corporation and the Bank, are subject to a minimum supplementary leverage ratio of 3.0%. Advanced approaches institutions that are insured depository institutions, such as the Bank, also must maintain at least a 3.0% supplementary leverage ratio to be considered "well-capitalized." The Corporation is also subject to a stress capital buffer, which integrates forward-looking stress test results with non-stress capital requirements, and the Bank is also subject to a capital conservation buffer, which respectively requires the Corporation and the Bank to hold a buffer of common equity Tier 1 capital above the minimum risk-based capital requirements in order to avoid constraints on dividends, equity repurchases and compensation. The minimum capital buffer requirement for advanced approaches banking organizations, such as the Corporation and the Bank, is 2.5%.

A "countercyclical buffer" of 0% to 2.5% of a banking organization's total risk-weighted assets for advanced approaches banking organizations, such as the Corporation, is also a component of the capital adequacy framework. In general, the amount of the countercyclical capital buffer is a weighted average of the countercyclical capital buffer established in the various jurisdictions in which the banking organization has credit exposures. The U.S. countercyclical buffer is currently set at 0%.

As a result of the stress test results published by the Federal Reserve on June 25, 2020, the Corporation's stress capital buffer requirement for the 2020 capital plan cycle was set at 2.5%. The 2020 stress capital buffer became effective October 1, 2020, and results in a common equity tier 1 capital ratio minimum requirement of 7.0%.

LIQUIDITY STANDARDS

Northern Trust is subject to the U.S. liquidity coverage ratio (LCR) requirement, which is designed to ensure that covered banking organizations including the Corporation and the Bank maintain an adequate level of unencumbered high-quality liquid assets equal to their expected net cash outflow for a 30-day time horizon under a regulatorily prescribed liquidity stress scenario. As of December 31, 2020, the Corporation and the Bank were in compliance with applicable LCR requirements.

Basel III also introduced the concept of a net stable funding ratio (NSFR) requirement, designed to promote more medium- and long-term funding of the assets and activities of banking entities over a one-year time horizon. The NSFR will require certain banking organizations, including the Corporation and the Bank, to maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities. The Federal Reserve Board adopted a final rule in October 2020 implementing the NSFR and the Corporation and the Bank will be required to comply with the NSFR requirement on July 1, 2021.

The enhanced prudential standards imposed by the Dodd-Frank Act, as amended by the Regulatory Reform Act, specify certain required liquidity risk management practices for large bank holding companies and banks. The Federal Reserve Board's October 2019 final tailoring rule targets certain aspects of these requirements based on banking organizations' business model and risk profile, as delineated into four risk-based categories. The Corporation, a Category II institution under the final tailoring rule, is subject to the liquidity risk management, monthly liquidity stress testing, liquidity buffer, and daily liquidity reporting requirements.

PROMPT CORRECTIVE ACTION

Federal banking regulators are required to take "prompt corrective action" with respect to a depository institution if that institution does not meet certain capital adequacy standards, and are also authorized to take appropriate action against a parent bank holding company of an under-capitalized banking subsidiary. In certain instances, the Corporation could be required to guarantee the performance of a capital restoration plan for the Bank if it were under-capitalized.

RESTRICTIONS ON TRANSACTIONS WITH AFFILIATES

The Bank is subject to restrictions governing transactions between it and affiliated entities, including the Corporation, its affiliates, and its subsidiaries. These transactions must be on terms and conditions that are, or in good faith would be, offered to nonaffiliated companies (i.e., on terms not less favorable to the Bank than market terms). Further, extensions of credit must be secured fully with qualifying collateral and are limited to 10% of the Bank's capital and surplus for transactions with a single affiliate and to 20% of the Bank's capital and surplus for transactions with all affiliates.

ANTI-MONEY LAUNDERING, ANTI-TERRORISM LEGISLATION, AND OFFICE OF FOREIGN ASSETS CONTROL

The Corporation and certain of its subsidiaries are subject to the Bank Secrecy Act of 1970, as amended by the USA PATRIOT Act of 2001 and implemented in the regulation of the federal banking regulators and Financial Crimes Enforcement Network, which contain anti-money laundering (AML) and financial transparency requirements for conducting due diligence, verifying client and beneficial owner identification, and monitoring client transactions and detecting and reporting suspicious activities. AML laws outside the United States contain similar requirements.

Various legal requirements prohibit Northern Trust entities from engaging in business in or with certain jurisdictions and parties, such as organizations and countries suspected of aiding, harboring or engaging in terrorist acts. The U.S. Department of the Treasury's Office of Foreign Assets Control publishes lists of these prohibited parties. If the Corporation or the Bank finds a sanctioned name or jurisdiction on any transaction or account, the Corporation or the Bank must reject or block such account or transaction and notify the appropriate authorities.

Failure to comply with these requirements could result in fines, penalties, lawsuits, regulatory sanctions or difficulties in obtaining approvals, restrictions on their business activities or harm to reputation. Many other countries have imposed similar laws and regulations that apply to the Corporation's non-U.S. offices. The Corporation has established policies and procedures to comply with these laws and the related regulations.

DEPOSIT INSURANCE AND ASSESSMENTS

The Bank accepts deposits, and eligible deposits have the benefit of FDIC insurance up to the applicable limit, which is currently $250,000 for each depositor account. Under the FDIA, insurance of deposits may be terminated by the FDIC upon a finding that the insured depository institution has engaged in unsafe and unsound practices, is in an unsafe or unsound condition, or has violated laws, regulations, or orders from a regulatory agency. Certain liquid assets are excluded from the deposit insurance assessment base of custody banks that satisfy certain institutional eligibility criteria. This has the effect of reducing the amount of deposit insurance fund insurance premiums payable by custody banks. The Bank qualifies as a custody bank for this purpose.

COMMUNITY REINVESTMENT ACT

The Bank is subject to the Community Reinvestment Act (CRA). The CRA and the regulations issued thereunder are intended to encourage banks to help meet the credit needs of their service areas, including low and moderate income neighborhoods, consistent with the safe and sound operations of the banks. The Bank fulfills its CRA obligations by making qualified investments for the purposes of community development. The Bank received an "outstanding" CRA rating from the Federal Reserve Board in its most recent CRA examination. In September 2020, the Federal Reserve Board issued an advance notice of proposed rulemaking regarding potential changes to the regulations issued under the CRA, but has not taken further action to date.

PRIVACY AND SECURITY

Federal law establishes a minimum federal standard of financial privacy by, among other provisions, requiring financial institutions to adopt and disclose privacy policies with respect to consumer information, setting limitations on disclosure to third parties of consumer information, setting standards for protecting client information, and requiring notice of data breaches in certain circumstances. Most states, the European Union (EU) and other non-U.S. jurisdictions also have adopted their own statutes and/or regulations concerning data privacy and security and requiring notification of data breaches. For example, a European data protection framework—the General Data Protection Regulation (GDPR)—was adopted on April 8, 2016, and became effective in all European Economic Area (EEA) member states on May 25, 2018. GDPR is designed to harmonize data privacy laws across the EEA, to protect EEA citizens' data privacy and to reshape the way organizations across the region approach data privacy. GDPR has extraterritorial effect as its scope includes all data controllers and processors outside the EEA whose processing activities relate to the offering of goods or services to, or monitoring the behavior of, EEA individuals. Organizations that violate certain provisions of GDPR could be fined up to €20 million or 4% of their annual worldwide revenue for the preceding fiscal year, whichever is greater. In the United States, the California Consumer Privacy Act (CCPA) was adopted by the State of California and became effective January 1, 2020, and then enforceable on July 1, 2020. The CCPA substantially increased the rights of California residents to understand how their personal data is collected and used by commercial businesses. The CCPA includes a private right of action (permitting lawsuits to be brought by private individuals instead of the state Attorney General or other government actor for breaches), and contemplates civil penalties of up to $2,500 for each violation and up to $7,500 for each intentional violation. On November 3, 2020, the California Privacy Rights Act of 2020 (CPRA), which amends and supersedes portions of the CCPA, was approved by a majority of California voters. Among other changes, the CPRA will establish the California Privacy Protection Agency to administer, implement, and enforce the CCPA and CPRA. The CPRA is expected to be fully operative beginning in 2023, and will apply to personal information collected on or after January 1, 2022. However, the CCPA, including its implementing regulations, remains in effect until the CPRA is operative.

The Corporation has adopted and disseminated privacy policies and communicates required information relating to financial privacy and data security in accordance with applicable law.

CONSUMER LAWS AND REGULATIONS

The Corporation's banking subsidiaries are subject to certain federal and state laws and regulations designed to protect consumers in transactions with banks. Failure to comply with these laws and regulations could lead to substantial penalties, operating restrictions and reputational damage to the financial institution. Consumer laws and regulations are enforced by the Consumer Financial Protection Bureau (CFPB) and other federal and state regulators.

NON-U.S. REGULATION

Northern Trust is subject to the laws and regulatory authorities of the jurisdictions in which its non-U.S. branches and subsidiaries operate. For example, branches and subsidiaries conducting banking and asset servicing businesses in the United Kingdom (UK) are authorized to do so pursuant to the UK Financial Services and Markets Act 2000. They are authorized by the Prudential Regulation Authority (PRA) or the Financial Conduct Authority (FCA) and regulated by the FCA and, in some instances, also the PRA. The PRA and FCA exercise broad supervisory and disciplinary powers that include the power to revoke temporarily or permanently authorization to conduct a regulated business upon breach of the relevant regulations, suspend registered employees, and impose censures and fines on both regulated businesses and their regulated employees.

Northern Trust's European branches and subsidiaries are subject to the laws and regulatory authorities of the EU and the member states in which they are domiciled or the UK. For example, with the establishment of Northern Trust Global Services SE as an EU-domiciled credit institution in Luxembourg in connection with the Corporation's planning related to the UK's departure from the EU, commonly referred to as "Brexit," such entity is subject to the prudential supervision of the European Central Bank and the CSSF. Moreover, Northern Trust's non-EU branches and subsidiaries conducting financial services activities also may be within the scope of the laws of the EU, given that some EU laws apply to the wider EEA, which includes not only all EU member states but also the non-EU member states Iceland, Liechtenstein and Norway, and because of increasing extraterritorial effect of EU legislation.

Effective January 31, 2020, the UK is no longer a member of the EU. EU legislation as it applied to the UK on December 31, 2020 is now a part of UK domestic legislation, under the control of the UK's Parliament and Assemblies.

The following items provide a brief description of certain recently implemented and in-progress regulatory changes in the EU and the UK relevant to the Corporation and its subsidiaries, in addition to the BRRD and GDPR discussed under "The Dodd-Frank Act, as Amended—Resolution Planning" and "Privacy and Security," respectively, above.

Revised Capital Requirements Directive and revised Capital Requirements Regulation. The EU Capital Requirements Directive of June 26, 2013 (CRD) and the EU Capital Requirements Regulation of June 26, 2013 (CRR) govern the legal framework for banking regulation in the EU, including, among other things, own fund requirements. On November 23, 2016, the European Commission (Commission) published a proposal for a revision of the CRD (CRD V) and the CRR (CRR II). EU member states were required to implement the requirements in the CRD V into their national law by December 28, 2020, with most of the measures to apply from December 29, 2020. Most of the CRR II will apply from June 28, 2021. Further, CRD V and CRR II currently contain mandates for the European Banking Authority (EBA) to produce a number of regulatory technical standards (RTS) and implementing technical standards (ITS), which remain under development.

Central Securities Depositories Regulation. On September 17, 2014, the EU Central Securities Depositories Regulation (CSDR) entered into force (subject to a number of transitional provisions). The CSDR aims principally to ensure that transactions between buyers and sellers of dematerialized securities are settled in a safe and timely manner by introducing common securities settlement standards across the EU. CSDR requires several "Level 2" (or implementing) measures in order for its provisions to take effect fully. A number of these "Level 2" measures were published in 2017. On September 13, 2018, the Commission Delegated Regulation (EU) 2018/1229 supplementing the CSDR with regard to technical standards on settlement discipline was published in the EU's Official Journal. The EU subsequently approved the delay of the CSDR until February 1, 2022. Since then, the Commission's 2021 work program and its 2020 Capital Markets Union Action Plan announced an intention to bring forward a legislative proposal which would include simplifying the CSDR and to make it more proportionate and less burdensome for stakeholders. In December 2020, the Commission published a Consultation Paper which seeks stakeholder input into its legislative proposals to ensure the overall objectives of CSDR are fulfilled in a more proportionate, efficient and effective manner.

Securities Financing Transactions and Reuse of Collateral Regulation. On November 25, 2015, the EU adopted a regulation on securities financing transactions and reuse of collateral (SFTR) as part of its approach to addressing shadow banking. The regulation includes provisions for enhanced transparency and reporting of securities financing transactions. The SFTR entered into force on January 12, 2016, subject to certain transitional provisions. SFTR requires adoption of certain "Level 2" measures which were finalized in 2019. The reporting obligations under the SFTR have been phased in from April 11, 2020, with the final phase commencing on January 11, 2021.

UK Criminal Finances Act. On September 30, 2017, the UK Criminal Finances Act (CFA) entered into force. The CFA has extra-territorial effect, introducing certain new corporate criminal offenses in circumstances where a corporate entity or partnership (a relevant body) fails to prevent an "associated person" (broadly meaning an employee, agent or person who performs services for or on behalf of the relevant body) from criminally facilitating the evasion of tax, whether the tax evaded is owed (i) in the UK or (ii) in a foreign country if the relevant body has a nexus, or any conduct constituting part of the foreign tax evasion facilitation offense takes place, in the UK. These corporate offenses are strict liability offenses, such that in circumstances where an associated person of a relevant body criminally facilitates the evasion of tax and such relevant body has failed to prevent the associated person from committing such criminal facilitation of tax evasion, the relevant body will itself be guilty of a criminal offense carrying unlimited fines, unless it can show that it put in place reasonable prevention procedures (or by showing that it was not reasonable in all the circumstances to expect the relevant body to have any prevention procedures in place).

Benchmarks Regulation. On January 1, 2018, the EU Benchmarks Regulation (BMR) became applicable in all EU member states, subject to certain transitional provisions. The principal objectives of the BMR are to restore investor confidence in the accuracy, robustness and integrity of indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds, and the benchmark-setting process itself. The BMR aims to achieve these objectives by ensuring that benchmarks are not subject to conflicts of interest, are used appropriately, and reflect the actual market or economic reality they are intended to measure. On July 24, 2020, the Commission adopted a legislative proposal (COM (2020) 337 final) (2020/0154 (COD)) for a regulation amending the BMR regarding designation of replacement benchmarks where certain widely-used benchmarks have ceased, including the London Interbank Offered Rate (LIBOR). The proposed regulation would provide for a statutory replacement rate to be available by the time a benchmark ceases. The proposed regulation is working its way through the European Parliament and the Council of the EU and is expected to be adopted by such institutions the day following its publication in the EU's Official Journal.

Sustainable Finance Disclosure Regulations. On December 29, 2019, the EU Sustainable Finance Disclosure Regulations (SFDR) entered into force. SFDR aims to prevent "greenwashing" (conveying a misleading or false impression a product is more environmentally favorable than it actually is) by requiring disclosure of how sustainability risks and environmental, societal and governance (ESG) factors are part of the investment and business processes of asset managers. Mandatory disclosures are required to be published at product and manager levels in a variety of ways, including on websites, in pre-contractual documents (e.g. prospectuses) and in annual reports. Certain significant provisions apply from March 10, 2021.

Taxonomy Regulation. On July 12, 2020, Regulation (EU) 2020/852 (Taxonomy Regulation) entered into force. The Taxonomy Regulations are part of the EU's recent measures designed to encourage environmentally sustainable investment decision making and introduce a technical framework to ascertain how sustainable an economic activity is. The Taxonomy Regulations apply to financial market participants including Market in Financial Instruments Directive (MiFID) firms, Undertakings for the Collective Investment in Transferable Securities (UCITS) management companies, and alternative investment fund managers, and will require them to make further pre-contractual and periodic disclosures. The Commission has delayed the application of "Level 2" measures and it is expected that the implementation date will be delayed to January 2022.

European Deposit Insurance Scheme. On October 11, 2017, the Commission announced that it aimed to complete all parts of the European Banking Union by 2018. The banking union is in place and operational except for the creation of a single European Deposit Insurance Scheme (EDIS). The EDIS will apply to deposit guarantee schemes (DGSs) in EU member states participating in the single supervisory mechanism (SSM) and credit institutions in those member states. The EU Council and Parliament continue to consider the legislative proposal for the EDIS regulation, which was published by the Commission in November 2015. The Commission proposed changes to its approach to the EDIS in its October 2017 communication on completing the banking union but has not yet published any revisions to the text of the EDIS regulation to reflect these changes. The communication also urged the European Parliament and European Council to adopt these measures quickly to complete the banking union however this remains outstanding.

Fifth EU Money Laundering Directive. On July 9, 2018, the Fifth EU Money Laundering Directive (MLD5) entered into force. MLD5 was required to be transposed into local law by EU member states by January 10, 2020 and introduces the following key changes to the current EU AML regime: (i) EU member states must ensure that registers of ultimate beneficial owners of companies and other legal entities become accessible to the general public; (ii) the current AML regime is extended to additional service providers, such as electronic wallet providers, virtual currency exchange service providers, and art dealers, and further specifications regarding the scope of application of MLD5 with respect to tax advisors and estate agents are provided; (iii) the threshold for identifying holders of prepaid cards is lowered to €150; and (iv) EU member states will be required to implement enhanced due diligence measures to monitor suspicious transactions involving high-risk countries more strictly.

Shareholder Rights Directive. On May 17, 2017, the recast Shareholder Rights Directive (EU) 2017/828 was published (SRD II). Member states of the EU were required to bring into force the laws, regulations and administrative provisions necessary to comply with the Directive by June 10, 2019. SRD was designed to establish requirements in relation to the exercise of shareholder rights and, recognizing that shares are often held through complex chains of intermediaries, SRD II is designed to improve mechanisms for the identification of shareholders by companies, as well as improve the transmission of information along the chain of intermediaries to facilitate the exercise of shareholder rights. Non-EU intermediaries are required to comply with the requirements if they provide services with respect to shares of companies that have their registered office in the EU. The Commission Implementing Regulation (EU) 2018/1212 of September 3, 2018 set out minimum requirements for implementing SRD II, which have applied from September 3, 2020.

Depositary Books & Records. Following the European Securities and Markets Authority's opinion on asset segregation and application of depositary delegation rules to central securities depositories published on July 20, 2017, and entered into force on April 1, 2020, changes were introduced by two EU regulations modifying the existing Alternative Investment Fund Managers Directive (AIFMD) and UCITS Level 2 Regulations: Commission Delegated Regulation (EU) No 2018/1618 relating to the safe-keeping duties of depositaries of alternative investment funds and Commission Delegated Regulation (EU) No 2018/1619 relating to the safe-keeping duties of depositaries of UCITS. The changes aim to better define asset segregation requirements and to add additional safeguards, primarily focusing on information flow between the depositary and any third party to whom safe-keeping functions have been delegated. The key changes (i) impact the frequency of reconciliations between the depositary's internal accounts and records and those of any third party in the custody chain, (ii) require the depositary to maintain an independent record separate from the record maintained by the third party, and (iii) increase due diligence obligations where custody of assets is delegated to third parties outside of the EU. The changes impact Northern Trust's subsidiaries providing depositary services to European-domiciled fund clients.

In addition to the above, the Bank's and the Corporation's subsidiary banks located outside the United States are subject to regulatory capital requirements in the jurisdictions in which they operate. As of December 31, 2020, each of our non-U.S. banking subsidiaries had capital ratios above their specified minimum requirements.

Human Capital Management

Northern Trust recognizes that our employees are critical to our success, which includes meeting clients' needs and supporting our communities. We take our search for, and retention of, top talent seriously. To attract and retain talent, we manage programs to develop a diverse pipeline of future leaders and help employees advance their careers. The discussion below outlines Northern Trust's human capital objectives, which include talent management, compensation, and diversity, equity and inclusion.

EMPLOYEES

Northern Trust employed approximately 20,900 full-time equivalent staff members as of December 31, 2020. The regional breakout of our workforce is 46% North America, 35% Asia Pacific, and 19% Europe, Middle East, and Africa.

TALENT ACQUISITION, DEVELOPMENT, AND MANAGEMENT

Our employees are critical to our success, and represent one of our biggest assets. We pride ourselves in attracting strong talent and have identified development of diverse talent as one of our top corporate strategic priorities. Our focus on work/life balance, diversity, and career mobility also contribute to our employer brand.

Sourcing and Recruitment. We target our talent identification, sourcing methods, and recruiting strategies to specific locations using several channels: job boards, colleges, professional networks, associations and online social networks. We base hiring decisions on a variety of factors including relevant experience, educational background, diversity, past accomplishments, professional licensing, and strong evidence of integrity and ethical behavior.

Onboarding. Northern Trust is committed to helping all new hires succeed. New employees begin their onboarding journey with a comprehensive learning roadmap that orients them to our company story, business, and culture. Orientation programs also augment the onboarding experience by providing global, regional, and/or local information along with networking activities to help connect new hires to each other and other colleagues.

Learning and Development. An integrated partnership between our enterprise-wide and functional learning and development teams ensure we deliver holistic training solutions. Through our online learning portal, all employees can access a curated portfolio of professional and custom training solutions specific to managers, top talent, and client-servicing staff. Our Future Focused Skills offerings prepare employees to serve our clients in a digital economy. Many of our programs are interactive, include peer networking, and offer direct access to expert facilitators. Training is offered in self-paced, mobile, virtual and instructor-led formats.

Talent Cultivation and Review. Northern Trust is committed to identifying and developing a deep pipeline of diverse, top talent at all levels across the globe to meet our evolving business needs. Annually, managers conduct talent assessments, and business and regional leadership teams hold talent reviews focused on specific topics, such as workforce needs, diversity, top talent, readiness for promotion, internal movement, and succession plans. Robust talent review meetings are held with our senior management and our Board of Directors each year.

Performance Management. Northern Trust's annual performance management process includes goal setting, a mid-year review process, multi-rater feedback, and a year-end review. Priorities are set by our Chief Executive Officer and applied to each business, department, team and individual. Managers are encouraged to provide regular feedback and coaching to drive performance and results.

Engagement and Recognition. Building an inclusive, connected and engaged employee culture is essential. We invite all employees to provide management with anonymous feedback about their everyday experiences at work through an annual Employee Engagement Survey. Survey results are thoroughly evaluated to identify strengths, progress, and opportunities. If warranted, actions are identified and taken to further strengthen employee engagement. We also foster an "attitude of gratitude" through our online Celebrate Great recognition platform that allows employees to recognize one another for everyday contributions.

TOTAL REWARDS

Our compensation and benefit programs are designed to be market competitive and positioned around the median of the local market, enabling us to attract and retain talent needed to deliver on Northern Trust's strategy.

Compensation Programs. Our compensation programs are intended to motivate our employees to deliver the highest-quality service to our clients and achieve the greatest collective business results. They are designed, implemented and communicated to promote behaviors that are consistent with Northern Trust's desired culture, character and our values of service, expertise, and integrity.

Northern Trust's base salary programs enable us to attract and retain talent by providing a competitive level of fixed pay reflecting each employee's position, experience, qualifications and tenure. Additionally, all employees are eligible for incentive compensation to reward performance that delivers superior team or individual results. Incentive compensation is linked to both financial and non-financial performance criteria, including risk considerations, as determined by our Board of Directors and senior management. Select senior leaders and individual contributors may receive a percentage of their incentive in Northern Trust stock to encourage retention of key talent and to align rewards with company performance.

Employee Benefits. While the exact composition of the employee benefit package varies by country, our benefit programs are designed to be locally competitive, to meet the needs of our employees and their families, and to reflect cultural values of the organization. Typical programs include retirement benefits, health care benefits, paid time off, income protection benefits such as disability and life insurance, leaves of absence, and access to our Employee Assistance Program. In recent years, we have expanded our focus on employee well-being by providing: additional programs and resources to improve wellness, manage stress, build resiliency, and be attuned to mental health issues; access to flexible or voluntary benefits; and enhancements to various parental leave offerings.

DIVERSITY, EQUITY, AND INCLUSION (DE&I)

Northern Trust embraces diversity and recognizes the strength it brings to our employees, clients, shareholders, and local communities. We are committed to building an inclusive culture in which all individuals are welcomed, respected, supported, and valued so that they can fully participate in, and contribute to, our success.

Embedding DE&I. Our DE&I vision is embedded at all levels of our organization, with women and ethnic minorities representing half of our executive officers and more than half of our Board of Directors. Our Board, through its Corporate Governance Committee, also engages in active oversight of our DE&I strategies, programs, and principles. Our Head of Corporate Social Responsibility and Global Diversity, Equity and Inclusion serves as an Executive Vice President, and reports directly to our Chairman, President and Chief Executive Officer. The following table presents further detail with respect to the gender and ethnic diversity of our Board of Directors and executive officers.

TABLE 2: BOARD OF DIRECTORS AND EXECUTIVE OFFICERS REPRESENTATION

	DECEMBER 31, 2020					
	FEMALE	MALE	WHITE	BLACK	HISPANIC	ASIAN
Board of Directors	23%	77%	61%	23%	8%	8%
Executive Officers	33%	67%	83%	17%	—%	—%

Progress and Accountability. Tracking and measuring our DE&I efforts is key to a successful strategy. We utilize a global DE&I dashboard to track the organization's progress and integrate these metrics as part of our overall corporate strategy and goals. To drive accountability for increasing diversity representation across the organization, we measure representation in relation to our hiring, retention and promotion practices. Each business unit evaluates this data, and acts as needed, to improve overall diversity within their organization. Our executive leaders report their progress through the DE&I Executive Council co-chaired by our Chief Executive Officer and our Head of Corporate Social Responsibility and Global Diversity, Equity and Inclusion. Our Global Executive DE&I Council is responsible for providing strategic oversight and defining and driving accountability on the global DE&I priorities.

Available Information

Through the Corporation's website at www.northerntrust.com, the Corporation makes available free of charge its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all other reports and all amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (Exchange Act), as soon as reasonably practicable after it files such material with, or furnishes such material to, the SEC. The contents of the Corporation's website, the website of the SEC or any other website referenced herein are not a part of this Annual Report on Form 10-K.

ITEM 1A - RISK FACTORS

In the normal course of our business activities, we are exposed to a variety of risks. The following discussion sets forth the risk factors that we have identified as being most significant to Northern Trust. Although we discuss these risk factors primarily in the context of their potential effects on our business, financial condition or results of operations, you should understand that these effects can have further negative implications such as: reducing the price of our common stock and other securities; reducing our capital, which can have regulatory and other consequences; affecting the confidence that clients, counterparties and/or applicable regulators have in us, with a resulting negative effect on our ability to conduct and grow our businesses; and reducing the attractiveness of our securities to rating agencies and potential purchasers, which may affect adversely our ability to raise capital and secure other funding or the cost at which we are able to do so. Further, additional risks beyond those discussed below, elsewhere in this Annual Report on Form 10-K or in other of our reports filed with, or furnished to, the SEC also could affect us adversely. We cannot assure you that the risk factors herein or elsewhere in our other reports address all potential risks that we may face.

These risk factors also serve to describe factors which may cause our results to differ materially from those described in forward-looking statements included herein or in other documents or statements that make reference to this Annual Report on Form 10-K. Forward-looking statements and other factors that may affect future results are discussed under "Forward-Looking Statements" included in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations."

COVID-19 Pandemic-Related Risks

Our business, results of operations, and financial condition generally have been, and will continue to be, adversely affected by the ongoing COVID-19 pandemic.

The ongoing COVID-19 pandemic, and governmental and societal responses thereto, have had a severe impact on global economic and market conditions, including heightened volatility in financial markets; global supply chain disruptions; and the institution of social distancing and shelter-in-place requirements that have resulted in temporary closures of many businesses, lost revenues, and increased unemployment.

These conditions have impacted—and/or may in the future impact—our business, results of operations, and financial condition negatively, including through lower net interest income resulting from lower interest rates; increased provisions for credit losses; lower revenue from certain of our fee-based businesses; impairments on the securities we hold; and decreased demand for certain of our products and services. Additionally, our liquidity and regulatory capital could be adversely impacted by volatility and disruptions in the capital and credit markets; volatility in foreign exchange rates; deposit flows; and client draws on lines of credit. Our business operations may also be disrupted if significant portions of our workforce are unable to work effectively, including because of illness, quarantines, government actions, or other restrictions in connection with the pandemic. Further, work-from-home and other modified business practices may introduce additional operational risks, including resiliency, cybersecurity, and execution risks, which may result in inefficiencies or delays, and may affect our ability to, or the manner in which we, conduct our business activities.

While governmental authorities have taken unprecedented measures to provide economic assistance to individual households and businesses, stabilize the markets, and support economic growth, the ultimate success of these measures is unknown and they may not be sufficient to mitigate fully the negative impact of the ongoing pandemic. Further, some measures may have a negative impact on our business, while our participation in other measures could result in reputational harm, litigation, or regulatory and government actions, proceedings, or penalties.

The extent to which the COVID-19 pandemic continues to impact our business, results of operations and financial condition will depend on future developments, which are highly uncertain and are difficult to predict, including, but not limited to, the duration and spread of the outbreak, its severity, the actions to contain the virus or treat its impact, the distribution, acceptance and efficacy of a vaccine, and how quickly and to what extent normal economic and operating conditions can resume. The ongoing pandemic may also have the effect of heightening many of the other risks described in this section entitled "Risk Factors" and any subsequent filings with the SEC.

Market Risks

We are dependent on fee-based business for a majority of our revenues, which may be affected adversely by market volatility, a downturn in economic conditions, underperformance and/or negative trends in investment preferences.

Our principal operational focus is on fee-based business, which is distinct from commercial banking institutions that earn most of their revenues from loans and other traditional interest-generating products and services. Fees for many of our products and services are based on the market value of assets under management, custody or administration; the volume of transactions processed; securities lending volume and spreads; and fees for other services rendered, all of which may be impacted negatively by market volatility, a downturn in economic conditions, underperformance and/or negative trends in investment preferences. For example, downturns in equity markets and decreases in the value of debt-related investments resulting from market disruption, illiquidity or other factors historically have reduced the valuations of the assets we manage or service for others, which generally impacted our earnings negatively. Market volatility and/or weak economic conditions also may affect wealth creation, investment preferences, trading activities, and savings patterns, which impact demand for certain products and services that we provide.

Our earnings also may be affected by poor investment returns or changes in investment preferences driven by factors beyond market volatility or weak economic conditions. For example, poor absolute or relative investment performance in funds or client accounts that we manage or in investment products that we design or provide could result in declines in the market values of portfolios that we manage and/or administer and may affect our ability to retain existing assets and to attract new clients or additional assets from existing clients. Further, broader changes in investment preferences that lead to less investment in mutual funds or other collective funds, such as the shift in investor preference to lower fee products, could impact our earnings negatively.

Changes in interest rates can affect our earnings negatively.

The direction and level of interest rates are important factors in our earnings. In response to the COVID-19 pandemic, the Federal Reserve Board further reduced interest rates, which generally had already been low relative to historical levels. This has had, and may continue to have, a negative impact on our net interest margin, which is the difference between what we earn on our assets and the interest rates we pay for deposits and other sources of funding. Low-interest-rate environments also have a negative impact on our fees earned on certain of our products. For example, we have waived certain fees associated with money market mutual funds due to the low level of short-term interest rates. Low net interest margins and fee waivers each negatively impact our earnings.

Conversely, in some circumstances, a rise in interest rates also may affect us negatively. For example, we may be impacted negatively if such an increase were to cause: market volatility and downturns in equity markets, resulting in a decrease in the valuations of the assets we manage or service for others, which generally impact our earnings negatively; our clients to transfer funds into investments with higher rates of return, resulting in decreased deposit levels and higher fund or account redemptions; our borrowers to experience difficulties in making higher interest payments, resulting in increased credit costs, provisions for loan and lease losses and charge-offs; reduced bond and fixed income fund liquidity, resulting in lower performance, yields and fees; a decline in the value of securities held in our portfolio of investment securities, resulting in decreased levels of capital and liquidity; or higher funding costs.

Further, although we have policies and procedures in place to assess and mitigate potential impacts of interest rate risks, if our assumptions about any number of variables are incorrect, these policies and procedures to mitigate risk may be ineffective, which could impact earnings negatively.

Please see “Market Risk” in the “Risk Management” section included in Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” for a more detailed discussion of interest rate and market risks we face.

Changes in the monetary, trade and other policies of various regulatory authorities, central banks, governments and international agencies may reduce our earnings and affect our growth prospects negatively.

The monetary, trade and other policies of U.S. and international governments, agencies and regulatory bodies have a significant impact on economic conditions and overall financial market performance. For example, the Federal Reserve Board regulates the supply of money and credit in the United States, and its policies determine in large part the level of interest rates and our cost of funds for lending and investing, which are important factors in our earnings. The actions of the Federal Reserve Board or other regulatory authorities also may reduce the value of financial instruments we hold. Further, their policies can affect our borrowers by increasing interest rates or making sources of funding less available, which may increase the risk that borrowers fail to repay their loans from us. Changes in monetary, trade and other governmental policies are beyond our control and can be difficult to predict, and we cannot determine the ultimate effect that any such changes would have upon our business, financial condition or results of operations.

The ultimate impact on us of the United Kingdom’s withdrawal from the European Union remains uncertain.

The UK ceased to be a member state of the EU on January 31, 2020, and the transition period provided for in the withdrawal agreement entered by the UK and the EU ended on December 31, 2020. In December 2020, the UK and the EU agreed on a trade and cooperation agreement that will apply provisionally after the end of the transition period until it is ratified by the parties to the agreement. On December 30, 2020, the UK passed legislation giving effect to the trade and cooperation agreement, with the EU expected to formally adopt the agreement in early 2021. While the trade and cooperation agreement covers the general objectives and framework of the relationship between the UK and the EU, it generally does not address the regulation of financial services. Instead, the parties adopted a declaration of their intention to agree by March 2021 upon a Memorandum of Understanding establishing a framework for regulatory cooperation on financial services.

Consequently, the ultimate impact of Brexit on the Corporation and the Bank remains uncertain and will depend on the terms of the post-Brexit relationships that remain to be negotiated between the UK and other EU nations, particularly in the area of financial services. Brexit has contributed, and may continue to contribute, to market volatility, particularly the valuation of the Euro and British pound, and could have significant adverse effects on our businesses, financial condition and results of operations. In conjunction with our Brexit-related preparations, we have implemented certain changes to our organizational structure, including the establishment of an EU-domiciled credit institution in Luxembourg. We have incurred, and may in the future continue to incur, additional costs associated with such measures while unforeseen political, regulatory, or other developments related to Brexit, or operational issues associated with the organizational restructuring related thereto, also may result in additional costs and disruption to our UK and EU businesses.

Uncertainty about the financial stability of various regions or countries across the globe, including the risk of defaults on sovereign debt and related stresses on financial markets, could have a significant adverse effect on our earnings.
Risks and concerns about the financial stability of various regions or countries across the globe could have a detrimental impact on economic and market conditions in these or other markets across the world. Foreign market and economic disruptions have affected, and may in the future affect, consumer confidence levels and spending, personal bankruptcy rates, levels of incurrence of and default on consumer debt, and home prices. Economic challenges faced in various foreign markets, including negative interest rates in some jurisdictions, or lack of confidence in the financial markets may adversely affect certain portions of our business, financial condition, and results of operations.

Declines in the value of securities held in our investment portfolio can affect us negatively.
Our investment securities portfolio represents a greater proportion, and our loan and lease portfolios represent a smaller proportion, of our total consolidated assets in comparison to many other financial institutions. The value of securities available for sale and held to maturity within our investment portfolio, which is generally determined based upon market values available from third-party sources, may fluctuate as a result of market volatility and economic or financial market conditions. Declines in the value of securities held in our investment portfolio negatively impact our levels of capital and liquidity. Although we have policies and procedures in place to assess and mitigate potential impacts of market risks, including hedging-related strategies, those policies and procedures are inherently limited because they cannot anticipate the existence or future development of currently unanticipated or unknown risks. Accordingly, we could suffer adverse effects as a result of our failure to anticipate and manage these risks properly.

Volatility levels and fluctuations in foreign currency exchange rates may affect our earnings.
We provide foreign exchange services to our clients, primarily in connection with our global custody business. Foreign currency volatility influences our foreign exchange trading income as does the level of client activity. Foreign currency volatility and changes in client activity may result in reduced foreign exchange trading income. Fluctuations in exchange rates may raise the potential for losses resulting from foreign currency trading positions, where aggregate obligations to purchase and sell a currency other than the U.S. dollar do not offset each other or offset each other in different time periods. We also are exposed to non-trading foreign currency risk as a result of our holdings of non-U.S. dollar denominated assets and liabilities, investments in non-U.S. subsidiaries, and future non-U.S. dollar denominated revenue and expense.

We have policies and procedures in place to assess and mitigate potential impacts of foreign exchange risks, including hedging-related strategies. Any failure or circumvention of our procedures to mitigate risk may impact earnings negatively. Please see "Market Risk" in the "Risk Management" section included in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," for a more detailed discussion of market risks we face.

Changes in a number of particular market conditions can affect our earnings negatively.
In past periods, reductions in the volatility of currency-trading markets, the level of cross-border investing activity, and the demand for borrowing securities or willingness to lend such securities have affected our earnings from activities such as foreign exchange trading and securities lending negatively. If these conditions occur in the future, our earnings from these activities may be affected negatively. In a few of our businesses, such as securities lending, our fee is calculated as a percentage of our clients' earnings, such that market and other factors that reduce our clients' earnings from investments or trading activities also reduce our revenues.

Operational Risks

Many types of operational risks can affect our earnings negatively.

We regularly assess and monitor operational risk in our businesses. Despite our efforts to assess and monitor operational risk, our risk management program may not be effective in all cases. Factors that can impact operations and expose us to risks varying in size, scale and scope include:

- failures of technological systems or breaches of security measures, including, but not limited to, those resulting from computer viruses or cyber-attacks;
- human errors or omissions, including failures to comply with applicable laws or corporate policies and procedures;
- theft, fraud or misappropriation of assets, whether arising from the intentional actions of internal personnel or external third parties;
- defects or interruptions in computer or communications systems;
- breakdowns in processes, over-reliance on manual processes, which are inherently more prone to error than automated processes, breakdowns in internal controls or failures of the systems and facilities that support our operations;
- unsuccessful or difficult implementation of computer systems upgrades;
- defects in product design or delivery;
- difficulty in accurately pricing assets, which can be aggravated by market volatility and illiquidity and lack of reliable pricing from third-party vendors;
- negative developments in relationships with key counterparties, third-party vendors, employees or associates in our day-to-day operations; and
- external events that are wholly or partially beyond our control, such as pandemics, geopolitical events, political unrest, natural disasters or acts of terrorism.

While we have in place many controls and business continuity plans designed to address many of these factors, these plans may not operate successfully to mitigate these risks effectively. We also may fail to identify or fully understand the implications and risks associated with changes in the financial markets or our businesses—particularly as our geographic footprint, product pipeline and client types evolve—and consequently fail to enhance our controls and business continuity plans to address those changes in an adequate or timely fashion. If our controls and business continuity plans do not address the factors noted above and operate to mitigate the associated risks successfully, such factors may have a negative impact on our business, financial condition or results of operations. In addition, an important aspect of managing our operational risk is creating a risk culture in which all employees fully understand that there is risk in every aspect of our business and the importance of managing risk as it relates to their job functions. We continue to enhance our risk management program to support our risk culture, ensuring that it is sustainable and appropriate for our role as a major financial institution. Nonetheless, if we fail to provide the appropriate environment that sensitizes all of our employees to managing risk, our business could be impacted adversely.

Failures of our technological systems or breaches of our security measures, including, but not limited to, those resulting from cyber-attacks, may result in losses.

Any failure, interruption or breach in the security of our systems could severely disrupt our operations. Our systems involve the use of clients' and our proprietary and confidential information, and security breaches, including cyber-attacks, could expose us to a risk of theft, loss or other misappropriation of this information. Our security measures may be breached due to the actions of outside parties, employee error, failure of our controls with respect to granting access to our systems, malfeasance or otherwise, and, as a result, an unauthorized party may obtain access to our or our clients' proprietary and confidential information, resulting in the theft, loss, destruction, gathering, monitoring, or other misappropriation of this information. Regulators globally are also introducing the potential for greater monetary fines on institutions that suffer from breaches leading to the misappropriation of such information. Most states, the EU and other non-U.S. jurisdictions also have adopted their own statutes and/or regulations concerning data privacy and security and requiring notification of data breaches. These and other changes in laws or regulations associated with the enhanced protection of personal and other types of information could greatly increase the size of potential fines related to the protection of such information.

Information security risks for large financial institutions like us are significant in part because of the evolving proliferation of new technologies, the use of the internet, mobile devices, and cloud technologies to conduct financial transactions and the increased sophistication and activities of hackers, terrorists, organized crime and other external parties, including foreign state actors. If we fail to continue to upgrade our technology infrastructure to ensure effective information security relative to the type, size and complexity of our operations, we could become more vulnerable to cyber-attack and, consequently, subject to significant regulatory penalties. Additionally, our computer, communications, data processing, networks, backup, business continuity or other operating, information or technology systems, including those that we outsource to other providers, may fail to operate properly or become disabled, overloaded or damaged as a result of a number of factors, including events that are wholly or partially beyond our control, which could have a negative effect on our ability to conduct our business activities.

The third parties with which we do business also are susceptible to the foregoing risks (including regarding the third parties with which they are similarly interconnected or on which they otherwise rely), and our or their business operations and activities may therefore be affected adversely, perhaps materially, by failures, terminations, errors or malfeasance by, or attacks or constraints on, one or more financial, technology, infrastructure or government institutions or intermediaries with whom we or they are interconnected or conduct business. In addition, our clients often use their own devices, such as computers, smart phones and tablets, to manage their accounts, which may heighten the risk of system failures, interruptions or security breaches.

In recent years, several financial services firms suffered successful cyber-attacks launched both domestically and from abroad, resulting in the disruption of services to clients, loss or misappropriation of sensitive or private information, and reputational harm. We and our clients have been, and expect to continue to be, subject to a wide variety of cyber-attacks and threats, including computer viruses, ransomware and other malicious code, distributed denial of service attacks, and phishing attacks, and it is possible that we could suffer material losses resulting from a breach. Because the techniques used to obtain unauthorized access, disable or degrade service or sabotage systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques, to implement adequate preventative measures, or to address them until they are discovered. In addition, successful cyber-attacks may persist for an extended period of time before being detected. Because any investigation of an information security incident would be inherently unpredictable, the extent of a particular information security incident and the path of investigating the incident may not be immediately clear. It may take a significant amount of time before such an investigation can be completed and full and reliable information about the incident is known. While such an investigation is ongoing, we may not necessarily know the extent of the harm or how best to remediate it, certain errors or actions could be repeated or compounded before they are discovered and remediated, and communication to the public, regulators, clients and other stakeholders may be inaccurate, any or all of which could further increase the costs and consequences of an information security incident.

We could be the subject of legal claims or proceedings related to security incidents, including regulatory investigations and actions. Further, the market perception of the effectiveness of our security measures could be harmed, our reputation could suffer and we could lose clients in conjunction with security incidents, each of which could have a negative effect on our business, financial condition and results of operations. A breach of our security also may affect adversely our ability to effect transactions, service our clients, manage our exposure to risk or expand our business. An event that results in the loss of information also may require us to reconstruct lost data or reimburse clients for data and credit monitoring services, which could be costly and have a negative impact on our business and reputation.

Further, even if not directed at us, attacks on financial or other institutions important to the overall functioning of the financial system or on our counterparties could affect, directly or indirectly, aspects of our business.

Errors, breakdowns in controls or other mistakes in the provision of services to clients or in carrying out transactions for our own account can subject us to liability, result in losses or have a negative effect on our earnings in other ways.

In our asset servicing, investment management, fiduciary administration and other business activities, we effect or process transactions for clients and for ourselves that involve very large amounts of money. Failure to manage or mitigate operational risks properly can have adverse consequences, and increased volatility in the financial markets may increase the magnitude of resulting losses. For example, in the third quarter of 2020 we incurred a $43.4 million charge related to a corporate action processing error. Given the high volume of transactions we process, errors that affect earnings may be repeated or compounded before they are discovered and corrected.

Our dependence on technology, and the need to update frequently our technology infrastructure, exposes us to risks that also can result in losses.

Our businesses depend on information technology infrastructure, both internal and external, to record and process, among other things, a large volume of increasingly complex transactions and other data, in many currencies, on a daily basis, across numerous and diverse markets and jurisdictions. Due to our dependence on technology and the important role it plays in our business operations, we must constantly improve and update our information technology infrastructure. Upgrading, replacing, and modernizing these systems can require significant resources and often involves implementation, integration and security risks that could cause financial, reputational and operational harm. Failure to ensure adequate review and consideration of critical business and regulatory issues prior to and during the introduction and deployment of key technological systems or failure to align operational capabilities adequately with evolving client commitments and expectations may have a negative impact on our results of operations. The failure to respond properly to, and invest in, changes and advancements in technology could limit our ability to attract and retain clients, prevent us from offering products and services comparable to those offered by our competitors, inhibit our ability to meet regulatory requirements or otherwise have a material adverse effect on our operations.

The systems and models we employ to analyze, monitor and mitigate risks, as well as for other business purposes, are inherently limited, may not be effective in all cases and, in any case, cannot eliminate all risks that we face.

We use various systems and models in analyzing and monitoring several risk categories, as well as for other business purposes. However, these systems and models are inherently limited because they involve techniques and judgments that cannot anticipate every economic and financial outcome in the markets in which we operate, nor can they anticipate the specifics and timing of such outcomes. Further, these systems and models may fail to quantify accurately the magnitude of the risks we face. Our measurement methodologies rely on many assumptions and historical analyses and correlations. These assumptions may be incorrect, and the historical correlations on which we rely may not continue to be relevant. Consequently, the measurements that we make may not adequately capture or express the true risk profiles of our businesses or provide accurate data for other business purposes, each of which ultimately could have a negative impact on our business, financial condition and results of operations. Errors in the underlying model or model assumptions, or inadequate model assumptions, could result in unanticipated and adverse consequences, including material loss or noncompliance with regulatory requirements or expectations.

A failure or circumvention of our controls and procedures could have a material adverse effect on our business, financial condition and results of operations.

We regularly review and update our internal controls, disclosure controls and procedures, and corporate governance policies and procedures. Any system of controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system will be met. Any failure or circumvention of our controls and procedures or failure to comply with regulations related to controls and procedures could have a material adverse effect on our business, financial condition and results of operations. If we identify material weaknesses in our internal control over financial reporting or are otherwise required to restate our financial statements, we could be required to implement expensive and time-consuming remedial measures and could lose investor confidence in the accuracy and completeness of our financial reports. In addition, there are risks that individuals, either employees or contractors, consciously circumvent established control mechanisms by, for example, exceeding trading or investment management limitations, or committing fraud.

Failure of any of our third-party vendors to perform can result in losses.

Third-party vendors provide key components of our business operations such as data processing, recording and monitoring transactions, online banking interfaces and services, and network access. Our use of third-party vendors exposes us to the risk that such vendors may not comply with their servicing and other contractual obligations to us, including with respect to indemnification and information security, and to the risk that we may not satisfy applicable regulatory responsibilities regarding the management and oversight of third parties and outsourcing providers. While we have established risk management processes and continuity plans, any disruptions in service from a key vendor for any reason or poor performance of services could have a negative effect on our ability to deliver products and services to our clients and conduct our business. Replacing these third-party vendors or performing the tasks they perform for ourselves could create significant delay and expense.

We are subject to certain risks inherent in operating globally which may affect our business adversely.

In conducting our U.S. and non-U.S. business, we are subject to risks of loss from various unfavorable political, economic, legal or other developments, including social or political instability, changes in governmental policies or policies of central banks, expropriation, nationalization, confiscation of assets, price controls, capital controls, exchange controls, unfavorable tax rates and tax court rulings and changes in laws and regulations. Less mature and often less regulated business and investment environments heighten these risks in various emerging markets. Our non-U.S. operations accounted for 28% of our revenue in 2020. Our non-U.S. businesses are subject to extensive regulation by various non-U.S. regulators, including governments, securities exchanges, central banks and other regulatory bodies in the jurisdictions in which those businesses operate. In many countries, the laws and regulations applicable to the financial services industry are uncertain and evolving and may be applied with extra scrutiny to foreign companies. Moreover, the regulatory and supervisory standards and expectations in one jurisdiction may not conform with standards or expectations in other jurisdictions. Even within a particular jurisdiction, the standards and expectations of multiple supervisory agencies exercising authority over our affairs may not be harmonized fully. Accordingly, it may be difficult for us to determine the exact requirements of local laws in every market or manage our relationships with multiple regulators in various jurisdictions. Our inability to remain in compliance with local laws in a particular market and manage our relationships with regulators could have an adverse effect not only on our businesses in that market but also on our reputation generally. The failure to mitigate properly such risks or the failure of our operating infrastructure to support such international activities could result in operational failures and regulatory fines or sanctions, which could affect our business and results of operations adversely.

We actively strive to optimize our geographic footprint. This optimization may occur by establishing operations in lower-cost locations or by outsourcing to third-party vendors in various jurisdictions. These efforts expose us to the risk that we may not maintain service quality, control or effective management within these operations. In addition, we are exposed to the relevant macroeconomic, political and similar risks generally involved in doing business in those jurisdictions. The increased elements of risk that arise from conducting certain operating processes in some jurisdictions could lead to an increase in reputational risk. During periods of transition, greater operational risk and client concern exist with respect to maintaining a high level of service delivery.

In addition, we are subject in our global operations to rules and regulations relating to corrupt and illegal payments, money laundering, and laws relating to doing business with certain individuals, groups and countries, such as the U.S. Foreign Corrupt Practices Act, the USA PATRIOT Act, the UK Bribery Act, and economic sanctions and embargo programs administered by the U.S. Office of Foreign Assets Control and similar agencies worldwide. While we have invested and continue to invest significant resources in training and in compliance monitoring, the geographic diversity of our operations, employees, clients and customers, as well as the vendors and other third parties with whom we deal, presents the risk that we may be found in violation of such rules, regulations, laws or programs and any such violation could subject us to significant penalties or affect our reputation adversely.

Failure to control our costs and expenses adequately could affect our earnings negatively.

Our success in controlling the costs and expenses of our business operations also impacts operating results. Through various parts of our business strategy, we aim to produce efficiencies in operations that help reduce and control costs and expenses, including the costs of losses associated with operating risks attributable to servicing and managing financial assets. Failure to control these and other costs could affect our earnings negatively and reduce our competitive position.

Pandemics, natural disasters, global climate change, acts of terrorism and global conflicts may have a negative impact on our business and operations.

Pandemics, natural disasters, global climate change, acts of terrorism, global conflicts or other similar events have in the past, and may in the future have, a negative impact on our business and operations. While we have in place business continuity plans, such events may still damage our facilities, disrupt or delay the normal operations of our business (including communications and technology), result in harm to or cause travel limitations on our employees, and have a similar impact on our clients, suppliers, third-party vendors and counterparties. These events also could impact us negatively to the extent that they result in reduced capital markets activity, lower asset price levels, or disruptions in general economic activity in the United States or abroad, or in financial market settlement functions. In addition, these or similar events may impact economic growth negatively, which could have an adverse effect on our business and operations, and may have other adverse effects on us in ways that we are unable to predict. Please see “COVID-19 Pandemic-Related Risks” in this “Risk Factors” section for a description of risks associated with the ongoing COVID-19 pandemic.

Credit Risks

Failure to evaluate accurately the prospects for repayment when we extend credit or maintain an adequate allowance for credit losses can result in losses or the need to make additional provisions for credit losses, both of which reduce our earnings.

We evaluate extensions of credit before we make them and then provide for credit risks based on our assessment of the credit losses inherent in our loan portfolio, including undrawn credit commitments. This process requires us to make difficult and complex judgments. Challenges associated with our credit risk assessments include identifying the proper factors to be used in assessments and accurately estimating the impacts of those factors. Allowances that prove to be inadequate may require us to realize increased provisions for credit losses or write down the value of certain assets on our balance sheet, which in turn would affect earnings negatively.

Market volatility and/or weak economic conditions can result in losses or the need for additional provisions for credit losses, both of which reduce our earnings.

Credit risk levels and our earnings also can be affected by market volatility and/or weakness in the economy in general and in the particular locales in which we extend credit, a deterioration in credit quality or a reduced demand for credit. Adverse changes in the financial performance or condition of our borrowers resulting from market volatility and/or weakened economic conditions could impact the borrowers’ abilities to repay outstanding loans, which could in turn impact our financial condition and results of operations negatively.

The failure or perceived weakness of any of our significant counterparties could expose us to loss.
The financial markets are characterized by extensive interconnections among financial institutions, including banks, broker/dealers, collective investment funds and insurance companies. As a result of these interconnections, we and many of our clients have counterparty exposure to other financial institutions. This counterparty exposure presents risks to us and to our clients because the failure or perceived weakness of any of our counterparties has the potential to expose us to risk of loss. Instability in the financial markets has resulted historically in some financial institutions becoming less creditworthy. During such periods of instability, we are exposed to increased counterparty risks, both as principal and in our capacity as agent for our clients. Changes in market perception of the financial strength of particular financial institutions can occur rapidly, are often based upon a variety of factors and can be difficult to predict. In addition, the criteria for and manner of governmental support of financial institutions and other economically important sectors remain uncertain. Further, the consolidation of financial services firms and the failures of other financial institutions has in the past increased, and may in the future increase, the concentration of our counterparty risk. These risks are heightened by the fact that our operating model relies on the use of unaffiliated sub-custodians to a greater degree than certain of our competitors that have banking operations in more jurisdictions than we do. We are not able to mitigate all of our and our clients' counterparty credit risk. If a significant individual counterparty defaults on an obligation to us, we could incur financial losses that have a material and adverse effect on our business, financial condition and results of operations.

Changes in the method pursuant to which LIBOR or other interest rate benchmarks are determined could adversely impact our business and results of operations.
Many financial markets currently rely on interbank offered rates (each, an "IBOR") as mutually agreed upon reference rates serving as the basis for the pricing and valuation of assets, trading positions, loans and other financial transactions. Global regulators have signaled interest in replacing existing IBOR rates with alternative reference rates. While there are multiple IBORs, LIBOR is the most widely used interest rate benchmark in the world and serves as the reference rate for our floating-rate funding, certain of the products that we own or offer, various lending and securities transactions in which we are involved, and many derivatives that we use to manage our or our clients' risk. On November 30, 2020, ICE Benchmark Administration ("IBA"), the administrator of U.S. Dollar LIBOR ("USD LIBOR") and other IBORs, announced that, following required consultations, (i) it intends to cease publication of 1-week and 2-month USD LIBOR at the end of 2021 and (ii) subject to compliance with applicable regulations, including as to representativeness, it does not intend to cease publication of the remaining USD LIBOR tenors until June 30, 2023. Globally, financial market participants have begun to transition away from LIBOR and other IBORs to alternative reference rates, and following the IBA's announcement, U.S. regulators, including the Federal Reserve Board, issued statements encouraging banks to stop entering into new USD LIBOR contracts "as soon as practicable," and by no later than December 31, 2021. Any change in the availability or calculation of LIBOR or other interest rate benchmarks may affect adversely the cost or availability of floating-rate funding; the yield on loans or securities held by us; the amounts received and paid on derivative instruments we have entered into; the value of loans, securities, or derivative instruments held by us or our clients, which, in the case of assets held by our clients, could also negatively impact the amount of fees we earn in relation to such assets; the trading market for securities based on LIBOR or other benchmarks; the terms of new loans being made using different or modified reference rates; or our ability to use derivative instruments to manage risk effectively. While we are working to facilitate an orderly transition from LIBOR to alternative interest rate benchmarks for us and our clients, there continues to be uncertainty regarding the effect that these developments, any discontinuance, modification or other reforms to LIBOR or any other interest rate benchmarks, or the establishment of alternative reference rates may have on LIBOR or other interest rate benchmarks. Further, the potential transition away from the use of LIBOR or other interest rate benchmarks, or uncertainty related to any such potential transition, may cause us to recognize additional costs, experience operational disruptions or result in client disputes or litigation, which may negatively impact our business, financial condition or results of operations.

Liquidity Risks
If we do not manage our liquidity effectively, our business could suffer.
Liquidity is essential for the operation of our business. Market conditions, unforeseen outflows of funds or other events could have a negative effect on our level or cost of funding, affecting our ongoing ability to accommodate liability maturities and deposit withdrawals, meet contractual obligations, and fund new business transactions at a reasonable cost and in a timely manner. If our access to stable and low-cost sources of funding, such as customer deposits, is reduced, we may need to use alternative funding, which could be more expensive or of limited availability. Further evolution in the regulatory requirements relating to liquidity and risk management also may impact us negatively. Additional regulations may impose more stringent liquidity requirements for large financial institutions, including the Corporation and the Bank. Given the overlap and complex interactions of these regulations with other regulatory changes, the full impact of the adopted and proposed regulations remains uncertain until their full implementation. For more information on these

regulations and other regulatory changes, see “Supervision and Regulation—Liquidity Standards” in Item 1, “Business.” Any substantial, unexpected or prolonged changes in the level or cost of liquidity could affect our business adversely.

If the Bank is unable to supply the Corporation with funds over time, the Corporation could be unable to meet its various obligations.

The Corporation is a legal entity separate and distinct from the Bank and the Corporation’s other subsidiaries. The Corporation relies on dividends paid to it by the Bank to meet its obligations and to pay dividends to stockholders of the Corporation. There are various legal limitations on the extent to which the Bank and the Corporation’s other subsidiaries can supply funds to the Corporation by dividend or otherwise. Dividend payments by the Bank to the Corporation in the future will require continued generation of earnings by the Bank and could require regulatory approval under certain circumstances. For more information on dividend restrictions, see “Supervision and Regulation—Payment of Dividends” in Item 1, “Business.”

We may need to raise additional capital in the future, which may not be available to us or may only be available on unfavorable terms.

We may need to raise additional capital to provide sufficient resources to meet our business needs and commitments, to accommodate the transaction and cash management needs of our clients, to maintain our credit ratings in response to regulatory changes, including capital rules, or for other purposes. However, our ability to access the capital markets, if needed, will depend on a number of factors, including the state of the financial markets. Rising interest rates, disruptions in financial markets, negative perceptions of our business or our financial strength, or other factors may impact our ability to raise additional capital, if needed, on terms acceptable to us. Any diminished ability to raise additional capital, if needed, could subject us to liability, restrict our ability to grow, require us to take actions that would affect our earnings negatively or otherwise affect our business and our ability to implement our business plan, capital plan and strategic goals adversely.

Any downgrades in our credit ratings, or an actual or perceived reduction in our financial strength, could affect our borrowing costs, capital costs and liquidity adversely.

Rating agencies publish credit ratings and outlooks on our creditworthiness and that of our obligations or securities, including long-term debt, short-term borrowings, preferred stock and other securities. Our credit ratings are subject to ongoing review by the rating agencies and thus may change from time to time based on a number of factors, including our own financial strength, performance, prospects and operations as well as factors not under our control, such as rating-agency-specific criteria or frameworks for our industry or certain security types, which are subject to revision from time to time, and conditions affecting the financial services industry generally.

Downgrades in our credit ratings may affect our borrowing costs, our capital costs and our ability to raise capital and, in turn, our liquidity adversely. A failure to maintain an acceptable credit rating also may preclude us from being competitive in certain products. Additionally, our counterparties, as well as our clients, rely on our financial strength and stability and evaluate the risks of doing business with us. If we experience diminished financial strength or stability, actual or perceived, a decline in our stock price or a reduced credit rating, our counterparties may be less willing to enter into transactions, secured or unsecured, with us, our clients may reduce or place limits on the level of services we provide them or seek other service providers, or our prospective clients may select other service providers, all of which may have other adverse effects on our business.

The risk that we may be perceived as less creditworthy relative to other market participants is higher in a market environment in which the consolidation, and in some instances failure, of financial institutions, including major global financial institutions, could result in a smaller number of larger counterparties and competitors. If our counterparties perceive us to be a less viable counterparty, our ability to enter into financial transactions on terms acceptable to us or our clients, on our or our clients’ behalf, will be compromised materially. If our clients reduce their deposits with us or select other service providers for all or a portion of the services we provide to them, our revenues will decrease accordingly.

Our success with large, complex clients requires substantial liquidity.

A significant portion of our business involves providing certain services to large, complex clients, which, by their nature, require substantial liquidity. Our failure to manage successfully the liquidity and balance sheet issues attendant to this portion of our business may have a negative impact on our ability to meet client needs and grow.

Regulatory and Legal Risks

Failure to comply with regulations can result in penalties and regulatory constraints that restrict our ability to grow or even conduct our business, or that reduce earnings.

Virtually every aspect of our business around the world is regulated, generally by governmental agencies that have broad supervisory powers and the ability to impose sanctions. These regulations cover a variety of matters, including required capital levels, prohibited activities, and privacy and data protection. Some of these requirements are directed specifically at protecting depositors of the Bank, the federal deposit insurance fund and the banking system as a whole, not our stockholders or other security holders. Regulatory violations or the failure to meet formal or informal commitments made to regulators could generate penalties, require corrective actions that increase costs of conducting business, result in limitations on our ability to conduct business, restrict our ability to expand or impact our reputation adversely. Failure to obtain necessary approvals from regulatory agencies on a timely basis could affect proposed business opportunities and results of operations adversely. Similarly, changes in laws or failure to comply with new requirements or with future changes in laws or regulations may impact our results of operations and financial condition negatively.

Changes by the U.S. and other governments to laws, regulations and policies applicable to the financial services industry may heighten the challenges we face and make regulatory compliance more difficult and costly.

Various regulatory bodies have demonstrated heightened enforcement scrutiny of financial institutions through many regulatory initiatives. These initiatives have increased compliance costs and regulatory risks and may lead to financial and reputational damage in the event of a compliance violation. While we have programs in place, including policies, training and various forms of monitoring, designed to ensure compliance with legislative and regulatory requirements, these programs and policies may not always protect us from conduct by individual employees. Governments may take further actions to change significantly the way financial institutions are regulated, either through new legislation, new regulations, new applications of existing regulations or a combination of all of these methods. We cannot currently predict the impact, if any, of these changes to our business. Additionally, governments and regulators may take actions that increase intervention in the normal operation of our businesses and the businesses of our competitors in the financial services industry, and likely would involve additional legislative and regulatory requirements imposed on banks and other financial services companies. Any such actions could increase compliance costs and regulatory risks, lead to financial and reputational damage in the event of a violation, affect our ability to compete successfully, and also may impact the nature and level of competition in the industry in unpredictable ways. The full scope and impact of possible legislative or regulatory changes and the extent of regulatory activity is uncertain and difficult to predict.

For example, we are unable to predict what, if any, changes to the laws and regulations applicable to the financial services industry may be enacted by the new U.S. Congress in conjunction with the new U.S. presidential administration under unified party control, and what the impact of any such changes will be upon our business, financial condition, and results of operations. Moreover, the turnover of the U.S. presidential administration is expected to result in certain changes in the leadership and senior staffs of the federal banking agencies which are likely to impact the rulemaking, supervision, examination and enforcement priorities and policies of such agencies, the potential impacts of which, if any, we cannot predict at this time.

We may be impacted adversely by claims or litigation, including claims or litigation relating to our fiduciary responsibilities.

Our businesses involve the risk that clients or others may sue us, claiming that we have failed to perform under a contract or otherwise failed to carry out a duty perceived to be owed to them. Our trust, custody and investment management businesses are particularly subject to this risk. This risk is heightened when we act as a fiduciary for our clients and may be further heightened during periods when credit, equity or other financial markets are deteriorating in value or are particularly volatile, or when clients or investors are experiencing losses. In addition, regulators, tax authorities and courts have increasingly sought to hold financial institutions liable for the misconduct of their clients where such regulators and courts have determined that the financial institution should have detected that the client was engaged in wrongdoing, even though the financial institution had no direct knowledge of the wrongdoing.

Claims made or actions brought against us, whether founded or unfounded, may result in injunctions, settlements, damages, fines or penalties, which could have a material adverse effect on our financial condition or results of operations or require changes to our business. Even if we defend ourselves successfully, the cost of litigation is often substantial, and public reports regarding claims made against us may cause damage to our reputation among existing and prospective clients or negatively impact the confidence of counterparties, rating agencies and stockholders, consequently affecting our earnings negatively.

We may be impacted adversely by regulatory enforcement matters.
In the ordinary course of our business, we are subject to various supervisory, governmental and enforcement inquiries, examinations, investigations and subpoenas. These may be directed generally to participants in the businesses in which we are involved or may be directed specifically at us. In conjunction with both supervisory and enforcement matters, we may face limits on our ability to conduct or expand our business, be required to implement corrective actions that increase the costs of conducting business, or become subject to civil or criminal penalties or other remedial sanctions, any of which could result in reputational damage or otherwise have an adverse impact on us.

We may fail to set aside adequate reserves for, or otherwise underestimate our liability relating to, pending and threatened claims, with a negative effect on our earnings.
We estimate our potential liability for pending and threatened claims and record reserves when appropriate pursuant to generally accepted accounting principles (GAAP). The process is inherently subject to risk, including the risks that a judge or jury could decide a case contrary to our evaluation of the law or the facts or that a court could change or modify existing law on a particular issue important to the case. Our earnings will be adversely affected if our reserves are not adequate.

If we fail to comply with legal standards, we could incur liability to our clients or lose clients, which could affect our earnings negatively.
Managing or servicing assets with reasonable prudence in accordance with the terms of governing documents and applicable laws is an important part of our business. Failure to comply with the terms of governing documents and applicable laws, manage adequately the risks or manage appropriately the differing interests often involved in the exercise of fiduciary responsibilities may subject us to liability or cause client dissatisfaction, which may impact negatively our earnings and growth.

Strategic Risks
If we do not execute strategic plans successfully, we will not grow as we have planned and our earnings growth will be impacted negatively.
Our growth depends upon successful, consistent execution of our business strategies. A failure to execute these strategies will impact growth negatively. A failure to grow organically or to integrate successfully an acquisition could have an adverse effect on our business. The challenges arising from generating organic growth or the integration of an acquired business may include preserving valuable relationships with employees, clients, suppliers and other business partners, delivering enhanced products and services, as well as combining accounting, data processing and internal control systems. To the extent we enter into transactions to acquire complementary businesses and/or technologies, we may not achieve the expected benefits of such transactions, which could result in increased costs, lowered revenues, ineffective deployment of capital, regulatory concerns, exit costs or diminished competitive position or reputation. These risks may be increased if the acquired company operates internationally or in a geographic location where we do not already have significant business operations.

Execution of our business strategies also may require certain regulatory approvals or consents, which may include approvals of the Federal Reserve Board and other domestic and non-U.S. regulatory authorities. These regulatory authorities may impose conditions on the activities or transactions contemplated by our business strategies which may impact negatively our ability to realize fully the expected benefits of certain opportunities. Further, acquisitions we announce may not be completed if we do not receive the required regulatory approvals, if regulatory approvals are significantly delayed or if other closing conditions are not satisfied.

If we are not able to attract, retain and motivate key personnel, our business could be negatively affected.
Our success depends, in large part, on our ability to attract new employees, retain and motivate our existing employees, and continue to compensate our employees competitively. Competition for the best employees in most activities in which we engage can be intense, and there can be no assurance that we will be successful in our efforts to recruit and retain key personnel. Factors that affect our ability to attract and retain talented and diverse employees include our compensation and benefits programs, our profitability and our reputation for rewarding and promoting qualified employees. Our ability to attract and retain key executives and other employees may be hindered as a result of existing and potential regulations applicable to incentive compensation and other aspects of our compensation programs. These regulations may not apply to some of our competitors and to other institutions with which we compete for talent. The unexpected loss of services of key personnel, both in businesses and corporate functions, could have a material adverse impact on our business because of their skills, knowledge of our markets, operations and clients, years of industry experience and, in some cases, the difficulty of promptly finding qualified replacement personnel. Similarly, the loss of key employees, either individually or as a group, could affect our clients' perception of our abilities adversely.

We are subject to intense competition in all aspects of our businesses, which could have a negative effect on our ability to maintain satisfactory prices and grow our earnings.

We provide a broad range of financial products and services in highly competitive markets. We compete against large, well-capitalized, and geographically diverse companies that are capable of offering a wide array of financial products and services at competitive prices. In certain businesses, such as foreign exchange trading, electronic networks present a competitive challenge. Additionally, technological advances and the growth of internet-based commerce have made it possible for other types of institutions to offer a variety of products and services competitive with certain areas of our business. Many of these nontraditional service providers have fewer regulatory constraints and some have lower cost structures. The same may be said for competitors based in non-U.S. jurisdictions, where legal and regulatory environments may be more favorable than those applicable to the Corporation and the Bank as U.S.-domiciled financial institutions. These competitive pressures may have a negative effect on our earnings and ability to grow. Pricing pressures, as a result of the willingness of competitors to offer comparable or improved products or services at a lower price, also may result in a reduction in the price we can charge for our products and services, which could have, and in some cases has had, a negative effect on our ability to maintain or increase our profitability.

Damage to our reputation could have a direct and negative effect on our ability to compete, grow and generate revenue.

The failure to meet client expectations or fiduciary or other obligations, operational failures, litigation, regulatory actions or fines, the actual or alleged actions of our affiliates, vendors or other third parties with which we do business, the actual or alleged actions or statements of our employees or adverse publicity could materially and adversely affect our reputation as well as our ability to attract and retain clients or key employees. Damage to our reputation for delivery of a high level of service could undermine the confidence of clients and prospects in our ability to serve them and accordingly affect our earnings negatively. Damage to our reputation also could affect the confidence of rating agencies, regulators, stockholders and other parties in a wide range of transactions that are important to our business and the performance of our common stock. Failure to maintain our reputation ultimately would have an adverse effect on our ability to manage our balance sheet or grow our business. Actions by the financial services industry generally or by other members of or individuals in the financial services industry also could impact our reputation negatively. Further, whereas negative public opinion once was driven primarily by adverse news coverage in traditional media, the proliferation of social media channels utilized by us and third parties, as well as the personal use of social media by our employees and others, may increase the risk of negative publicity, including through the rapid dissemination of inaccurate, misleading or false information, which could harm our reputation or have other negative consequences.

We need to invest in innovation constantly, and the inability or failure to do so may affect our businesses and earnings negatively.

Our success in the competitive environment in which we operate requires consistent investment of capital and human resources in innovation, particularly in light of the current “FinTech” environment, in which financial institutions are investing significantly in evaluating new technologies, such as artificial intelligence, machine learning, blockchain and other distributed ledger technologies, and developing potentially industry-changing new products, services and industry standards. Our investment is directed at generating new products and services, and adapting existing products and services to the evolving standards and demands of the marketplace. Among other things, investing in innovation helps us maintain a mix of products and services that keeps pace with our competitors and achieve acceptable margins. Our investment also focuses on enhancing the delivery of our products and services in order to compete successfully for new clients or gain additional business from existing clients, and includes investment in technological innovation as well. Effectively identifying gaps or weaknesses in our product offerings also is important to our success. Falling behind our competition in any of these areas could affect our business opportunities, growth and earnings adversely. There are substantial risks and uncertainties associated with innovation efforts, including an increased risk that new and emerging technologies may expose us to increased cybersecurity and other information technology threats. We must invest significant time and resources in developing and marketing new products and services, and expected timetables for the introduction and development of new products or services may not be achieved and price and profitability targets may not be met. Further, our revenues and costs may fluctuate because new products and services generally require start-up costs while corresponding revenues take time to develop or may not develop at all.

Failure to understand or appreciate fully the risks associated with development or delivery of new product and service offerings will affect our businesses and earnings negatively.

The success of our innovation efforts depends, in part, on the successful implementation of new product and service initiatives. Not only must we keep pace with competitors in the development of these new offerings, but we must accurately price them (as well as existing products) on a risk-adjusted basis and deliver them to clients effectively. Our identification of risks arising from new products and services, both in their design and implementation, and effective responses to those identified risks, including pricing, is key to the success of our efforts at innovation and investment in new product and service offerings.

Our success with large, complex clients requires an understanding of the market and legal, regulatory and accounting standards in various jurisdictions.

A significant portion of our business involves providing certain services to large, complex clients which require an understanding of the market and legal, regulatory and accounting standards in various jurisdictions. Any failure to understand, address or comply with those standards appropriately could affect our growth prospects or affect our reputation negatively. We identify and manage risk through our business strategies and plans and our risk management practices and controls. If we fail to identify and manage significant risks successfully, we could incur financial loss, suffer damage to our reputation that could restrict our ability to grow or conduct business profitably, or become subject to regulatory penalties or constraints that could limit some of our activities or make them significantly more expensive. In addition, our businesses and the markets in which we operate are continuously evolving. We may fail to understand fully the implications of changes in legal or regulatory requirements, our businesses or the financial markets or fail to enhance our risk framework to address those changes in a timely fashion. If our risk framework is ineffective, either because it fails to keep pace with changes in the financial markets, legal and regulatory requirements, our businesses, our counterparties, clients or service providers or for other reasons, we could incur losses, suffer reputational damage or find ourselves out of compliance with applicable regulatory or contractual mandates or expectations. These risks are magnified as client requirements become more complex and as our increasingly global business requires end-to-end management of operational and other processes across multiple time zones and many inter-related products and services.

We may take actions to maintain client satisfaction that result in losses or reduced earnings.

We may take action or incur expenses in order to maintain client satisfaction or preserve the usefulness of investments or investment vehicles we manage in light of changes in security ratings, liquidity or valuation issues or other developments, even though we are not required to do so by law or the terms of governing instruments. The risk that we will decide to take actions to maintain client satisfaction that result in losses or reduced earnings is greater in periods when credit or equity markets are deteriorating in value or are particularly volatile and liquidity in markets is disrupted.

Other Risks

Changes in tax laws and interpretations and tax challenges may affect our earnings negatively.

Both U.S. and non-U.S. governments and tax authorities, including states and municipalities, from time to time issue new, or modify existing, tax laws and regulations. These authorities may also issue new, or modify existing, interpretations of those laws and regulations. These new laws, regulations or interpretations, and our actions taken in response to, or reliance upon, such changes in the tax laws may impact our tax position in a manner that affects our earnings negatively.

In the course of our business, we are sometimes subject to challenges from U.S. and non-U.S. tax authorities, including states and municipalities, regarding the amount of taxes due. These challenges may result in adjustments to the timing or amount of taxable income or deductions or the allocation of income among tax jurisdictions, all of which may require a greater provision for taxes or otherwise affect earnings negatively.

Changes in accounting standards may be difficult to predict and could have a material impact on our consolidated financial statements.

New accounting standards, changes to existing accounting standards, or changes in the interpretation of existing accounting standards by the Financial Accounting Standards Board, the International Accounting Standards Board, the SEC or bank regulatory agencies, or otherwise reflected in GAAP, potentially could have a material impact on our financial condition and results of operations. These changes are difficult to predict and in some cases we could be required to apply a new or revised standard retroactively, resulting in the revised treatment of certain transactions or activities, or even the restatement of consolidated financial statements for prior periods.

Our ability to return capital to stockholders is subject to the discretion of our Board of Directors and may be limited by U.S. banking laws and regulations, applicable provisions of Delaware law, or our failure to pay full and timely dividends on our preferred stock and the terms of our outstanding debt.

Holders of our common stock are entitled to receive only such dividends and other distributions of capital as our Board of Directors may declare out of funds legally available for such payments under Delaware law. Although we have declared cash dividends on shares of our common stock historically, we are not required to do so. In addition to the approval of our Board of Directors, our ability to take certain actions, including our ability to pay dividends, repurchase stock, and make other capital distributions, is dependent upon, among other things, their payment being made in accordance with the capital plan rules and capital adequacy standards of the Federal Reserve Board. On June 25, 2020, the Federal Reserve Board imposed restrictions that were designed to cause large bank holding companies to preserve capital, including suspending share repurchases, capping dividend payments, and only allowing common stock dividends according to a formula based on recent income. On December 18, 2020, the Federal Reserve Board extended a portion of these restrictions to limit share repurchases and dividend payments based on recent income. These restrictions will apply for the first quarter of 2021 and may be extended further.

A significant source of funds for the Corporation is dividends from the Bank. As a result, our ability to pay dividends on the Corporation's common stock will depend on the ability of the Bank to pay dividends to the Corporation. There are various legal limitations on the extent to which the Bank and the Corporation's other subsidiaries can supply funds to the Corporation by dividend or otherwise. Dividend payments by the Bank to the Corporation in the future will require continued generation of earnings by the Bank and could require regulatory approval under certain circumstances. If the Bank is unable to pay dividends to the Corporation in the future, our ability to pay dividends on the Corporation's common stock would be affected adversely.

Our ability to declare or pay dividends on, or purchase, redeem or otherwise acquire, shares of our common stock or any of our shares that rank junior to our preferred stock as to the payment of dividends and/or the distribution of any assets on any liquidation, dissolution or winding-up of the Corporation also generally will be prohibited in the event that we do not declare and pay in full dividends on our Series D Non-Cumulative Perpetual Preferred Stock (Series D preferred stock) and Series E Non-Cumulative Perpetual Preferred Stock (Series E preferred stock). Further, in the future if we default on certain of our outstanding debt or elect to defer interest payments on our Floating Rate Capital Debt we will be prohibited from making dividend payments on our common stock until such payments have been brought current.

Any reduction or elimination of our common stock dividend, or even our failure to increase our common stock dividend along with our competitors, likely would have a negative effect on the market price of our common stock. For more information on dividend restrictions, see "Supervision and Regulation—Payment of Dividends" and "Supervision and Regulation—Capital Planning and Stress Testing" in Item 1, "Business."

ITEM 1B – UNRESOLVED STAFF COMMENTS

None.

ITEM 2 – PROPERTIES

The executive offices of the Corporation and the Bank are located at 50 South La Salle Street in Chicago. This Bank-owned building is occupied by various divisions of Northern Trust's businesses. Adjacent to this building is one office building in which the Bank leases space principally for corporate support functions. Financial services are provided by the Bank and other subsidiaries of the Corporation through a network of offices in 22 U.S. states and Washington, D.C., and across 22 locations in Canada, Europe, the Middle East and the Asia-Pacific region. The majority of those offices are leased. The Bank's other primary U.S. operations are located in five facilities: a leased facility at 333 South Wabash Avenue in Chicago; a leased facility in Tempe, Arizona; and one leased and two Bank-owned supplementary operations/data center buildings located in the western suburbs of Chicago. A majority of the Bank's London-based staff is located at a leased facility at Canary Wharf in London. Additional support and operations activity originates from four facilities in India, two facilities in Ireland, and one facility in the Philippines, all of which are leased. The Bank and the Corporation's other subsidiaries operate from various other facilities in North America, Europe, the Asia-Pacific region, and the Middle East, most of which are leased.

The Corporation believes that its owned and leased facilities are suitable and adequate for its business needs. The Corporation continues to evaluate its owned and leased facilities and may determine from time to time that certain of its facilities are no longer necessary for its operations. There is no assurance that the Corporation will be able to dispose of any excess facilities or that it will not incur costs in connection with such dispositions, which could be material to its operating results in a given period.

For additional information relating to properties and lease commitments, refer to Note 9, "Buildings and Equipment" and Note 10, "Lease Commitments," included under Item 8, "Financial Statements and Supplementary Data," and which information is incorporated herein by reference.

ITEM 3 – LEGAL PROCEEDINGS

The information presented under the caption "Legal Proceedings" in Note 26, "Commitments and Contingent Liabilities," included under Item 8, "Financial Statements and Supplementary Data," is incorporated herein by reference.

ITEM 4 – MINE SAFETY DISCLOSURES

Not applicable.

SUPPLEMENTAL ITEM – INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following sets forth certain information with regard to each executive officer of the Corporation.

Michael G. O'Grady - Mr. O'Grady, age 55, joined Northern Trust in 2011 and has served as Chairman of the Board since January 2019, as Chief Executive Officer since 2018 and as President since 2017. Prior to that, Mr. O'Grady served as Executive Vice President and President of Corporate & Institutional Services from 2014 to 2016 and as Chief Financial Officer from 2011 to 2014. Before joining Northern Trust, Mr. O'Grady served as a Managing Director in Bank of America Merrill Lynch's Investment Banking Group.

Lauren E. Allnutt - Ms. Allnutt, age 44, joined Northern Trust in 2008 and has served as an Executive Vice President since November 2020 and as Controller since May 2019. Prior to that, Ms. Allnutt served as manager of Global Financial Control from 2014 to April 2019 and led International Accounting Policy and Control from 2013 to 2014.

Robert P. Browne - Mr. Browne, age 55, joined Northern Trust in 2009 as Executive Vice President and Chief Investment Officer. Before joining Northern Trust, Mr. Browne served in various senior investment-related roles at ING Investment Management Holdings N.V.

Peter B. Cherecwich - Mr. Cherecwich, age 56, joined Northern Trust in 2007 and has served as Executive Vice President and President of Corporate & Institutional Services since 2017. Prior to that, Mr. Cherecwich served as Executive Vice President and President of Global Fund Services from 2010 to 2017 and as Chief Operating Officer of Corporate & Institutional Services from 2008 to 2014. From 2007 to 2008, he served as Head of Institutional Strategy & Product Development. Before joining Northern Trust, Mr. Cherecwich served in several executive and operational roles at State Street Corporation.

Steven L. Fradkin - Mr. Fradkin, age 59, joined Northern Trust in 1985 and has served as Executive Vice President and President of Wealth Management since 2014. Prior to that, Mr. Fradkin served as President of Corporate & Institutional Services from 2009 to 2014. From 2004 to 2009, he served as Chief Financial Officer.

Mark C. Gossett - Mr. Gossett, age 59, joined Northern Trust in 1983 and has served as Executive Vice President and Chief Risk Officer since February 2020. Prior to that, Mr. Gossett served as Chief Credit Officer and Head of Market and Liquidity Risk from 2014 to January 2020 and as Co-Head of Global Foreign Exchange from 2012 to 2014. Mr. Gossett also previously served as the Chief Risk Officer of Asset Management from 2009 to 2012 and as the Chief Operating Officer of Asset Management from 2005 to 2009.

Susan C. Levy - Ms. Levy, age 63, joined Northern Trust in 2014 and has served as Executive Vice President and General Counsel since that time and as Corporate Secretary since 2018. Before joining Northern Trust, Ms. Levy served as Managing Partner of the law firm Jenner & Block from 2008 to 2014, where she was a partner since 1990.

Teresa A. Parker - Ms. Parker, age 60, joined Northern Trust in 1982 and has served as Executive Vice President and President of Corporate & Institutional Services for Europe, Middle East and Africa since 2017. Prior to that, Ms. Parker served as Chief Operating Officer of Corporate & Institutional Services from 2014 to 2017. From 2009 to 2014, she served as Executive Vice President, Corporate & Institutional Services for the Asia-Pacific region.

Thomas A. South - Mr. South, age 51, joined Northern Trust in 1999 and has served as Executive Vice President and Chief Information Officer since 2018. Prior to that, Mr. South served as Chief Business Architect from 2014 to 2018 and as Chief Operating Officer of Operations & Technology from 2013 to 2014.

Joyce M. St. Clair - Ms. St. Clair, age 61, joined Northern Trust in 1992 and has served as Executive Vice President and Chief Human Resources Officer since 2018. Prior to that, Ms. St. Clair served as Executive Vice President and Chief Capital Management Officer from 2015 to 2018, as President of Enterprise Operations from 2014 to 2015, as President of Operations & Technology from 2011 to 2014, and as Chief Risk Officer from 2007 to 2011.

Shundrawn A. Thomas - Mr. Thomas, age 47, joined Northern Trust in 2004 and has served as Executive Vice President and President of Asset Management since 2017. Prior to that, Mr. Thomas served as Executive Vice President and Head of the Funds and Managed Accounts Group from 2014 to 2017 and as Head of the Exchange-Traded Funds Group from 2010 to 2014. Mr. Thomas also previously served as President and Chief Executive Officer of Northern Trust Securities, Inc. from 2009 to 2010 and as Head of Corporate Strategy from 2006 to 2009.

Jason J. Tyler - Mr. Tyler, age 49, joined Northern Trust in 2011 and has served as Executive Vice President and Chief Financial Officer since January 2020. Prior to that, Mr. Tyler served as Chief Financial Officer of Wealth Management from 2018 to December 2019, as Global Head of Asset Management's Institutional Group from 2014 to 2018, and as Global Head of Strategy from 2011 to 2014. Before joining Northern Trust, Mr. Tyler served in certain executive and operational roles at Ariel Investments and Bank One/American National Bank.

All officers are appointed annually by the Board of Directors. Officers continue to hold office until their successors are duly elected or until their death, resignation or removal by the Board.

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 NASDAQ Stock Market LLC under the symbol “NTRS.” There were 1,643 shareholders of record as of January 31, 2021.

The following table shows certain information relating to the Corporation’s purchases of common stock for the three months ended December 31, 2020.

TABLE 3: REPURCHASES OF COMMON STOCK IN THE FOURTH QUARTER OF 2020

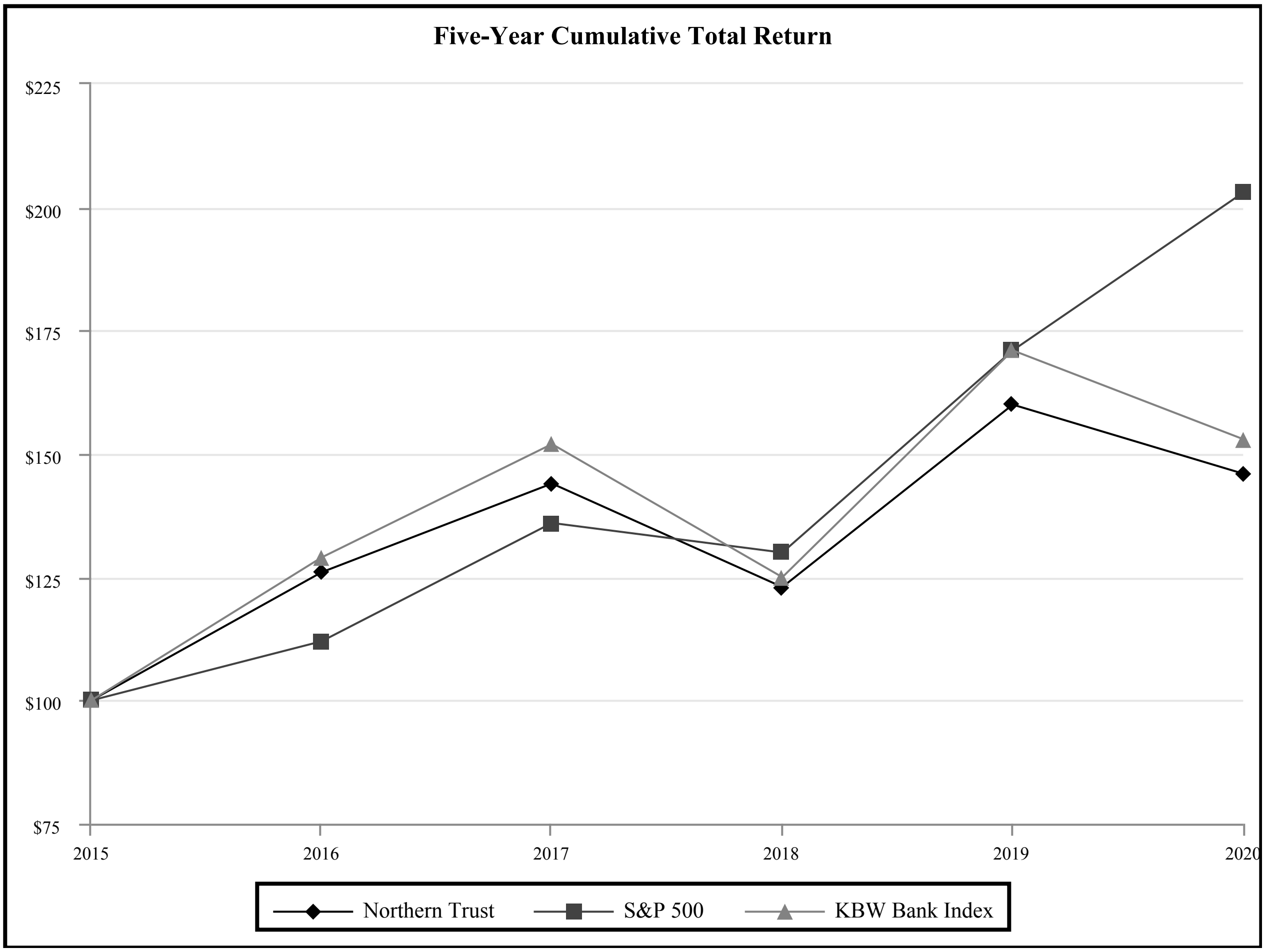
PERIOD	TOTAL NUMBER OF SHARES PURCHASED	AVERAGE PRICE PAID PER SHARE	TOTAL NUMBER OF SHARES PURCHASED AS PART OF A PUBLICLY ANNOUNCED PLAN	MAXIMUM NUMBER OF SHARES THAT MAY YET BE PURCHASED UNDER THE PLAN
October 1 - 31, 2020	—	$ —	—	6,487,647
November 1 - 30, 2020	—	—	—	6,487,647
December 1 - 31, 2020	—	—	—	6,487,647
Total (Fourth Quarter)	—	$ —	—	6,487,647

On March 16, 2020, the Corporation suspended its share repurchase program, previously announced by the Corporation on July 17, 2018, under which the Corporation’s Board of Directors authorized the Corporation to repurchase up to 25.0 million shares of the Corporation’s common stock. The repurchase authorization approved by the Board of Directors has no expiration date. Beginning in the second quarter of 2020, the Federal Reserve announced certain measures to ensure that large financial institutions, including Northern Trust, remain resilient despite the economic uncertainty resulting from the ongoing COVID-19 pandemic. Specifically, for the third and fourth quarters of 2020, no share repurchases were permitted by these institutions. On December 18, 2020, the Federal Reserve again extended its capital distribution limits into the first quarter of 2021 with certain modifications, which include continuing to limit dividend payments based on recent income and limiting share repurchases based on recent income. During the first quarter of 2021, the Corporation restarted its share repurchase program in accordance with such limitations. For more information, please refer to Note 15, “Stockholders’ Equity,” provided in Item 8, “Financial Statements and Supplementary Data.”

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN

The following graph compares the cumulative total stockholder return on the Corporation's common stock to the cumulative total return of the S&P 500 Index and the KBW Bank Index for the five fiscal years ended December 31, 2020. The cumulative total stockholder return assumes the investment of $100 in the Corporation's common stock and in each index on December 31, 2015 and assumes reinvestment of dividends. The KBW Bank Index is a modified-capitalization-weighted index made up of 24 of the largest banking companies in the United States. The Corporation is included in the S&P 500 Index and the KBW Bank Index.

Total Return Assumes $100 Invested on
December 31, 2015 with Reinvestment of Dividends



	DECEMBER 31,					
	2015	2016	2017	2018	2019	**2020**
Northern Trust	$ 100	$ 126	$ 144	$ 123	$ 160	**$ 146**
S&P 500	100	112	136	130	171	**203**
KBW Bank Index	100	129	152	125	171	**153**

ITEM 6 – SELECTED FINANCIAL DATA

FOR THE YEAR ENDED DECEMBER 31,	2020	2019	2018	2017	2016
CONDENSED STATEMENTS OF INCOME ($ In Millions)					
Noninterest Income	**$ 4,657.6**	$ 4,395.2	$ 4,337.5	$ 3,946.1	$ 3,726.9
Net Interest Income	**1,443.2**	1,677.9	1,622.7	1,429.2	1,234.9
Total Revenue	**$ 6,100.8**	$ 6,073.1	$ 5,960.2	$ 5,375.3	$ 4,961.8
Provision for Credit Losses	**125.0**	(14.5)	(14.5)	(28.0)	(26.0)
Noninterest Expense	**4,348.2**	4,143.5	4,016.9	3,769.4	3,470.7
Income before Income Taxes	**$ 1,627.6**	$ 1,944.1	$ 1,957.8	$ 1,633.9	$ 1,517.1
Provision for Income Taxes	**418.3**	451.9	401.4	434.9	484.6
Net Income	**$ 1,209.3**	$ 1,492.2	$ 1,556.4	$ 1,199.0	$ 1,032.5
Preferred Stock Dividends	**56.2**	46.4	46.4	49.8	23.4
Net Income Applicable to Common Stock	**$ 1,153.1**	$ 1,445.8	$ 1,510.0	$ 1,149.2	$ 1,009.1
PER COMMON SHARE					
Net Income – Basic	**$ 5.48**	$ 6.66	$ 6.68	$ 4.95	$ 4.35
– Diluted	**5.46**	6.63	6.64	4.92	4.32
Cash Dividends Declared Per Common Share	**2.80**	2.60	1.94	1.60	1.48
Book Value – End of Period (EOP)	**51.87**	46.82	43.95	41.28	38.88
Market Price – EOP	**93.14**	106.24	83.59	99.89	89.05
SELECTED BALANCE SHEET DATA ($ In Millions)					
At Year End:					
Earning Assets	**$ 158,531.6**	$ 125,236.6	$ 122,847.3	$ 129,656.6	$ 115,446.4
Total Assets	**170,003.9**	136,828.4	132,212.5	138,590.5	123,926.9
Deposits	**143,878.0**	109,120.6	104,496.8	112,390.8	101,651.7
Senior Notes	**3,122.4**	2,573.0	2,011.3	1,497.3	1,496.6
Long-Term Debt	**1,189.3**	1,148.1	1,112.4	1,449.5	1,330.9
Stockholders' Equity	**11,688.3**	11,091.0	10,508.3	10,216.2	9,770.4
Average Balances:					
Earning Assets	**$ 124,132.9**	$ 107,109.4	$ 113,731.0	$ 111,178.3	$ 107,037.6
Total Assets	**136,811.1**	117,551.4	122,946.6	119,607.4	115,570.3
Deposits	**108,511.1**	89,786.0	95,103.1	96,504.8	93,613.9
Senior Notes	**3,233.8**	2,389.1	1,704.0	1,496.9	1,496.6
Long-Term Debt	**1,189.2**	1,139.0	1,296.8	1,519.4	1,392.4
Stockholders' Equity	**11,192.6**	10,648.4	10,228.9	9,980.6	9,085.3
CLIENT ASSETS ($ In Billions)					
Assets Under Custody/Administration[(1)]	**$ 14,532.5**	$ 12,050.4	$ 10,125.3	$ 10,722.6	$ 8,541.3
Assets Under Custody	**11,262.8**	9,233.5	7,593.9	8,084.6	6,720.5
Assets Under Management	**1,405.3**	1,231.3	1,069.4	1,161.0	942.4
SELECTED RATIOS AND METRICS					
Financial Ratios and Metrics:					
Return on Average Common Equity	**11.2 %**	14.9 %	16.2 %	12.6 %	11.9 %
Return on Average Assets	**0.88**	1.27	1.27	1.00	0.89
Dividend Payout Ratio	**51.3**	39.2	29.2	32.5	34.3
Average Stockholders' Equity to Average Assets	**8.2**	9.1	8.3	8.3	7.9

Capital Ratios:	**DECEMBER 31, 2020**		DECEMBER 31, 2019		DECEMBER 31, 2018	
	STANDARDIZED APPROACH	**ADVANCED APPROACH**	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH
Common Equity Tier 1 Capital	**12.8 %**	**13.4 %**	12.7 %	13.2 %	12.9 %	13.7 %
Tier 1 Capital	**13.9**	**14.5**	14.5	15.0	14.1	15.0
Total Capital	**15.6**	**15.9**	16.3	16.8	16.1	16.9
Tier 1 Leverage	**7.6**	**7.6**	8.7	8.7	8.0	8.0
Supplementary Leverage[(2)]	**N/A**	**8.6**	N/A	7.6	N/A	7.0

	DECEMBER 31, 2017		DECEMBER 31, 2016			
	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH	WELL-CAPITALIZED RATIOS	MINIMUM CAPITAL RATIOS
Common Equity Tier 1 Capital	12.6 %	13.5 %	11.8 %	12.4 %	N/A	4.5 %
Tier 1 Capital	13.8	14.8	12.9	13.7	6.0	6.0
Total Capital	15.8	16.7	14.5	15.1	10.0	8.0
Tier 1 Leverage	7.8	7.8	8.0	8.0	N/A	4.0
Supplementary Leverage[(2)]	N/A	6.8	N/A	6.8	N/A	3.0

[(1)] For the purposes of disclosing Assets Under Custody/Administration, to the extent that both custody and administration services are provided, the value of the assets is included only once.
[(2)] Effective January 1, 2018, the Corporation and Bank are subject to a minimum supplementary leverage ratio of 3 percent. Refer to the "Supervision and Regulation—Capital Adequacy Requirements" section of Item 1, "Business" for further information on the supplementary leverage ratio.

ITEM 7 – MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is management's discussion and analysis of the financial condition and results of operations (MD&A) of Northern Trust Corporation (Corporation) for the year ended December 31, 2020. The following should be read in conjunction with the consolidated financial statements and related footnotes included in this report. Investors also should read the section entitled "Forward-Looking Statements."

BUSINESS OVERVIEW

The Corporation is a leading provider of wealth management, asset servicing, asset management and banking solutions to corporations, institutions, families and individuals. The Corporation focuses on managing and servicing client assets through its two client-focused reporting segments: Corporate & Institutional Services (C&IS) and Wealth Management. Asset management and related services are provided to C&IS and Wealth Management clients primarily by the Asset Management business.

The Corporation conducts business through various U.S. and non-U.S. subsidiaries, including The Northern Trust Company (the Bank). The Corporation was formed as a holding company for the Bank in 1971. The Corporation has a global presence with offices in 22 U.S. states and Washington, D.C., and across 22 locations in Canada, Europe, the Middle East and the Asia-Pacific region. Except where the context requires otherwise, the terms "Northern Trust," "we," "us," "our," "its," or similar terms refers to the Corporation and its subsidiaries on a consolidated basis.

COVID-19 PANDEMIC AND RECENT EVENTS

The COVID-19 pandemic presented health and economic challenges on an unprecedented scale during the year ended December 31, 2020. During this time, Northern Trust focused on the health and well-being of its workforce, meeting its clients' needs and supporting its communities. Although planning is underway to return to the office when conditions permit, the vast majority of staff is expected to continue to work remotely for some time to come.

Workforce

As governments implement plans to reopen their respective jurisdictions, Northern Trust has begun its return-to-office (RTO) planning under the oversight of its COVID Executive Committee composed of senior leadership across various functions. Plans for RTO were developed on a location-by-location basis based on business unit needs. Northern Trust considers site readiness, transportation options, technology capabilities, and workforce alignment, and has plans for the return of a small portion of each office's population in the initial RTO phase to allow for optimal social distancing. To ensure the health and well-being of Northern Trust's workforce, clients and visitors, several social distancing elements and other protective measures were implemented, such as temperature screenings, where allowable by law, distribution of personal protective equipment, and workforce health self-certifications. Several offices returned portions of their workforce in the second half of 2020.

Client Service

Northern Trust offered assistance to its clients affected by the COVID-19 pandemic by lending under a government lending program and providing payment deferrals. The Corporation continues to assess developments in government actions meant to support the economy, as further discussed below.

U.S. Small Business Administration's Paycheck Protection Program

During the second quarter of 2020, Northern Trust became a lender under the Paycheck Protection Program, as amended (PPP), which is administered by the U.S. Small Business Administration (SBA), an agency of the U.S. Department of the Treasury, which works with financial institutions in providing loans to small businesses. The PPP, which is meant to aid small businesses during the COVID-19 pandemic, was created under the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which was signed into law on March 27, 2020.

As of December 31, 2020, Northern Trust had 1,087 outstanding loans totaling $207.1 million under the PPP. 41 loans totaling $6.7 million underwent the loan forgiveness process, with 36 loans totaling $6.7 million being fully forgiven as of December 31, 2020.

The original timeframe for PPP lending expired on June 30, 2020, when Congress acted to extend PPP lending for a 5-week period to allow small businesses additional time to apply for the remaining PPP funds allocated by Congress in connection with the CARES Act. Northern Trust continued to lend under the PPP through the new August 8, 2020 deadline. The Economic Aid to Hard-Hit Small Businesses, Nonprofits and Venues Act (the Economic Aid Act) amended the PPP by extending the authority of the SBA to guarantee loans and the ability of PPP lenders to disburse PPP loans until

March 31. 2021. For further information on the PPP, please refer to Note 6, "Loans and Leases," provided in Item 8, "Financial Statements and Supplementary Data."

Troubled Debt Restructuring (TDR) Relief

Due to the economic environment arising from the COVID-19 pandemic, there have been two forms of relief provided to lenders exempting certain loan modifications which would otherwise be classified as TDRs from such classification. The first of these forms of relief is provided by certain interagency guidance from various banking regulators, including the Federal Reserve Board, the FDIC, the National Credit Union Administration, the Office of the Comptroller of the Currency, and the Consumer Financial Protection Bureau (Interagency Guidance). The other is provided under section 4013 of the CARES Act. Northern Trust has elected to apply each of these forms of relief, when applicable, in providing borrowers with qualifying loan modifications, including payment deferrals, in response to the COVID-19 pandemic. For further information on TDRs, please refer to Note 6, "Loans and Leases," provided in Item 8, "Financial Statements and Supplementary Data."

Community Support

COVID-19 Relief Support

Through December 31, 2020, Northern Trust provided $2.5 million in COVID-19 relief support to numerous organizations serving those most affected by the pandemic. Grantees include Americares, Doctors Without Borders, Feeding America, the Global FoodBanking Network, the Irish Red Cross, Meals on Wheels, NHS Charities Together, the Solidarity Response Fund for the World Health Organization, United Way Worldwide, World Food Program, and other COVID-19 relief funds in Chicago and Illinois to benefit those in need.

Small Business Support

Through December 31, 2020, Northern Trust provided $110.5 million in low-cost funding to assist Community Development Financial Institutions (CDFIs), which are instrumental in providing loans to small businesses and non-profit organizations under the PPP. The funding helps meet urgent demand among small businesses and non-profit groups by providing flexible terms and low rates. CDFIs provide loans, investments, financial services and technical assistance to underserved populations and communities. This funding, which is reported in Debt Securities Held to Maturity on the consolidated balance sheets, is separate and distinct from the $207.1 million of outstanding principal of loans made under the PPP.

Additional COVID-19 economic and market-related impacts to the Corporation's financial condition and results of operations are discussed throughout this Annual Report on Form 10-K.

FINANCIAL OVERVIEW

Net Income decreased $282.9 million, or 19%, to $1.21 billion in 2020 from $1.49 billion in 2019. Earnings per diluted common share was $5.46 in 2020 compared to $6.63 in 2019. Return on average common equity decreased to 11.2% in 2020 from 14.9% in 2019.

Revenue increased $27.7 million to $6.10 billion in 2020 from $6.07 billion in the prior year, primarily driven by increases in Trust, Investment and Other Servicing Fees of 4%, Other Operating Income of 33%, Foreign Exchange Trading Income of 16%, and Security Commissions and Trading Income of 29%, partially offset by a decrease in Net Interest Income of 14%.

Client assets under custody/administration (AUC/A) increased 21% from $12.05 trillion as of December 31, 2019 to $14.53 trillion as of December 31, 2020, primarily reflecting net inflows, favorable markets, and favorable currency translation. Client assets under custody, a component of AUC/A, increased 22% from $9.23 trillion as of December 31, 2019 to $11.26 trillion as of December 31, 2020. Client assets under custody included $7.42 trillion of global custody assets as of December 31, 2020, which increased 26% from $5.89 trillion as of December 31, 2019. Client assets under management increased 14% to $1.41 trillion as of December 31, 2020 from $1.23 trillion at December 31, 2019 due to favorable markets and net inflows.

Trust, Investment and Other Servicing Fees, which represent the largest component of total revenue, increased 4% to $4.00 billion in 2020, from $3.85 billion in 2019, primarily due to new business and favorable markets, partially offset by money market mutual fund fee waivers.

Foreign Exchange Trading Income of $290.4 million in 2020 increased 16% from $250.9 million in 2019, primarily driven by higher client volumes and increased market volatility, partially offset by lower foreign exchange swap activity in Treasury.

Security Commissions and Trading Income of $133.2 million in 2020 increased 29% from $103.6 million in 2019, primarily driven by higher core brokerage revenue and revenue from interest rate swaps.

Other Operating Income of $194.0 million in 2020 increased 33% from $145.5 million in 2019, primarily due to higher income related to a bank-owned life insurance program implemented during 2019, a charge in the prior year related to the decision made to sell substantially all of the lease portfolio, and higher miscellaneous income.

Net Interest Income on a fully taxable equivalent (FTE) basis of $1.48 billion in 2020, decreased $233.1 million, or 14%, from $1.71 billion in 2019, due to a decreased net interest margin, partially offset by higher levels of average earning assets. The net interest margin on an FTE basis decreased to 1.19% in 2020 from 1.60% in 2019, primarily due to lower interest rates.

The Corporation adopted Accounting Standards Update (ASU) No. 2016-13, "Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments" (ASU 2016-13) on January 1, 2020, which significantly changed the way impairment of financial instruments is recognized by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of financial instruments. Upon adoption of ASU 2016-13, the Corporation recorded a $13.7 million increase in the Allowance for Credit Losses with a corresponding cumulative effect adjustment to decrease Retained Earnings by $10.1 million, net of income taxes. For more information on the adoption of ASU 2016-13, please refer to Note 2, "Recent Accounting Pronouncements," provided in Item 8, "Financial Statements and Supplementary Data."

The Provision for Credit Losses in 2020 was $125.0 million as compared to a credit provision of $14.5 million in 2019. The provision for 2020 reflected an increase in the reserve evaluated on a collective basis. The increase in the collective basis reserve was primarily driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts, with increases primarily in the commercial and institutional and commercial real estate portfolios. The prior-year credit provision primarily reflected a decrease in the inherent reserve related to the residential real estate portfolio due to a reduction in outstanding loans and improved credit quality and reductions to the specific reserve related to the commercial and institutional and residential real estate portfolios, partially offset by an increase in the inherent reserve related to the private client portfolio due to an increase in outstanding loans and lower credit quality. Loans and Leases of $33.8 billion as of December 31, 2020 increased from $31.4 billion as of December 31, 2019. Net charge-offs for the year ended December 31, 2020 were $3.2 million, compared to net recoveries of $0.7 million for the year ended December 31, 2019. Nonaccrual assets increased to $132.4 million as of December 31, 2020 from $86.8 million as of December 31, 2019.

Noninterest Expense of $4.35 billion in 2020 increased $204.7 million, or 5%, from $4.14 billion in 2019, primarily reflecting increased Compensation, Equipment and Software, Employee Benefits, Occupancy, and Other Operating Expense, partially offset by lower Outside Services. Noninterest Expense in 2020 included severance-related charges of $55.0 million in connection with a reduction in force, a $43.4 million charge related to a corporate action processing error, and Occupancy expense related to an early lease exit arising from a workplace real estate strategy of $11.9 million.

The Provision for Income Taxes in 2020 totaled $418.3 million, representing an effective tax rate of 25.7%. The Provision for Income Taxes in 2019 totaled $451.9 million, representing an effective tax rate of 23.2%. The increase in the effective tax rate was primarily driven by $26.8 million of tax expense related to the reversal of tax benefits previously recognized through earnings and higher taxes payable on the income of the Corporation's non-U.S. branches.

Northern Trust continued to maintain a strong capital position during 2020, with all capital ratios exceeding those required for classification as "well-capitalized" under federal bank regulatory capital requirements. Total Stockholders' Equity increased 5% from $11.1 billion in 2019 to $11.7 billion at year-end 2020. During the fourth quarter of 2019, the Corporation issued and sold 16 million depositary shares, each representing 1/1,000th ownership interest in a share of Series E Non-Cumulative Perpetual Preferred Stock for proceeds of $391.4 million, net of underwriting discounts, commissions, and other issuance costs. These proceeds were subsequently used to fund the redemption of all outstanding shares of the Corporation's Series C Non-Cumulative Perpetual Preferred Stock on January 2, 2020.

The Corporation suspended its open-market share repurchase program on March 16, 2020. Prior to the suspension, 2,743,876 shares of common stock were repurchased on the open market at a total cost of $246.4 million. Subsequent to the suspension, the only shares repurchased were shares of common stock withheld upon the vesting of share-based compensation to satisfy tax withholding obligations. During the year ended December 31, 2020, the Corporation repurchased 3,276,589 shares of common stock, including 532,713 shares withheld related to share-based compensation, at a total cost of $299.8 million. During the year ended December 31, 2020, the Northern Trust quarterly common stock dividend remained unchanged from the end of the prior year at $0.70 per share. During the first quarter of 2021, the Corporation restarted its share repurchase program in accordance with limitations established by the Federal Reserve.

CONSOLIDATED RESULTS OF OPERATIONS

The following information summarizes our consolidated results of operations for 2020 compared to 2019. For a discussion related to the consolidated results of operations for 2019 compared to 2018, refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2019 (2019 Form 10-K), which was filed with the United States Securities and Exchange Commission on February 25, 2020.

Revenue

Northern Trust generates the majority of its revenue from Noninterest Income that primarily consists of Trust, Investment and Other Servicing Fees. Net Interest Income comprises the remainder of revenue and consists of Interest Income generated by earning assets, net of Interest Expense on deposits and borrowed funds.

Revenue in 2020 of $6.10 billion increased from $6.07 billion in 2019. Noninterest Income represented 76% and 72% of total revenue in 2020 and 2019, respectively, and totaled $4.66 billion in 2020, which increased 6% from $4.40 billion in 2019.

Noninterest Income in 2020 increased primarily reflecting higher Trust, Investment and Other Servicing Fees, Other Operating Income, Foreign Exchange Trading Income, and Security Commissions and Trading Income. Trust, Investment and Other Servicing Fees of $4.00 billion in 2020 increased $142.9 million, or 4%, from $3.85 billion in 2019, primarily due to new business and favorable markets, partially offset by money market mutual fund fee waivers. Foreign Exchange Trading Income in 2020 of $290.4 million increased $39.5 million, or 16%, compared with $250.9 million in 2019, primarily driven by higher client volumes and increased market volatility, partially offset by lower foreign exchange swap activity in Treasury. Security Commissions and Trading Income of $133.2 million in 2020 increased 29% from $103.6 million in 2019, primarily driven by higher core brokerage revenue and revenue from interest rate swaps. Other Operating Income of $194.0 million in 2020 increased 33% from $145.5 million in the prior year, primarily due to higher income related to a bank-owned life insurance program implemented during 2019, a charge in the prior year related to the decision made to sell substantially all of the lease portfolio, and higher miscellaneous income.

Net Interest Income on an FTE basis in 2020 of $1.48 billion decreased $233.1 million, or 14%, from $1.71 billion in 2019, due to a decreased net interest margin, partially offset by higher levels of average earning assets. The net interest margin on an FTE basis decreased to 1.19% in 2020 from 1.60% in 2019, primarily due to lower interest rates. Average earning assets increased $17.0 billion, or 16%, from $107.1 billion in 2019 to $124.1 billion in 2020, primarily reflecting higher levels of short-term interest bearing deposits, Securities, and Loans and Leases.

Additional information regarding Northern Trust's revenue by type is provided in the following table.

TABLE 4: REVENUE

	FOR THE YEAR ENDED DECEMBER 31,		
($ In Millions)	**2020**	2019	2018
Noninterest Income			
Trust, Investment and Other Servicing Fees	**$ 3,995.0**	$ 3,852.1	$ 3,753.7
Foreign Exchange Trading Income	**290.4**	250.9	307.2
Treasury Management Fees	**45.4**	44.5	51.8
Security Commissions and Trading Income	**133.2**	103.6	98.3
Other Operating Income	**194.0**	145.5	127.5
Investment Security Gains (Losses), net	**(0.4)**	(1.4)	(1.0)
Total Noninterest Income	**$ 4,657.6**	$ 4,395.2	$ 4,337.5
Net Interest Income	**1,443.2**	1,677.9	1,622.7
Total Revenue	**$ 6,100.8**	$ 6,073.1	$ 5,960.2

Trust, Investment and Other Servicing Fees

Trust, Investment and Other Servicing Fees were $4.00 billion in 2020 compared with $3.85 billion in 2019, and are based primarily on the market value of assets held in custody, managed or serviced; the volume of transactions; securities lending volume and spreads; and fees for other services rendered. Certain market value calculations on which fees are based are performed on a monthly or quarterly basis in arrears. Low-interest-rate environments have historically had a negative impact on fees earned on certain products.

Beginning in the second quarter of 2020, the Corporation began to waive a portion of certain fees associated with money market mutual funds due to the current low-interest-rate environment. Northern Trust voluntarily waived $29.3 million of money market mutual fund fees for the year ended December 31, 2020, of which $23.6 million was waived in the fourth quarter of 2020, related to the low-interest-rate environment. These fee waivers, which are expected to continue in the low-interest-rate environment in which the yields in certain funds remain insufficient to pay the stated fees associated with such funds, will adversely impact Trust, Investment and Other Servicing Fees within the C&IS and Wealth Management reporting segments. Northern Trust did not waive any money market mutual fund fees due to interest rates in the year ended December 31, 2019.

The components of Trust, Investment and Other Servicing Fees are provided in the following table.

TABLE 5: TRUST, INVESTMENT AND OTHER SERVICING FEES

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
C&IS Trust, Investment and Other Servicing Fees					
Custody and Fund Administration	**$ 1,586.1**	$ 1,549.3	$ 1,501.1	**2 %**	3 %
Investment Management	**511.1**	445.7	436.8	**15**	2
Securities Lending	**88.0**	87.2	102.0	**1**	(15)
Other	**136.4**	129.3	133.2	**6**	(3)
Total C&IS Trust, Investment and Other Servicing Fees	**$ 2,321.6**	$ 2,211.5	$ 2,173.1	**5 %**	2 %
Wealth Management Trust, Investment and Other Servicing Fees					
Central	**$ 607.3**	$ 619.3	$ 607.8	**(2)%**	2 %
East	**442.1**	422.2	401.7	**5**	5
West	**337.7**	330.9	320.0	**2**	3
Global Family Office	**286.3**	268.2	251.1	**7**	7
Total Wealth Management Trust, Investment and Other Servicing Fees	**$ 1,673.4**	$ 1,640.6	$ 1,580.6	**2 %**	4 %
Total Consolidated Trust, Investment and Other Servicing Fees	**$ 3,995.0**	$ 3,852.1	$ 3,753.7	**4 %**	3 %

Corporate & Institutional Services

C&IS Trust, Investment and Other Servicing Fees are primarily attributable to services related to custody, fund administration, investment management, and securities lending. Custody and fund administration fees, the largest component of C&IS fees, are driven primarily by values of client assets under custody/administration, transaction volumes and number of accounts. The asset values used to calculate these fees vary depending on the individual fee arrangements negotiated with each client. Custody fees related to asset values are client specific and are priced based on month-end market values, quarter-end market values, or the average of month-end market values for the quarter. The fund administration fees that are asset-value-related are priced using month-end, quarter-end, or average daily balances. Investment management fees are based generally on market values of client assets under management throughout the period. Typically, the asset values used to calculate fee revenue are based on a one-month or one-quarter lag.

Securities lending revenue is affected by market values; the demand for securities to be lent, which drives volumes; and the interest rate spread earned on the investment of cash deposited by investment firms as collateral for securities they have borrowed. The other services fee category in C&IS includes such products as investment risk and analytical services, benefit payments, and other services. Revenue from these products is based generally on the volume of services provided or a fixed fee.

Custody and fund administration fees increased from 2019 to 2020 primarily due to new business and favorable currency translation, partially offset by unfavorable non-U.S. markets. Investment management fees increased from 2019 to 2020 primarily due to new business and favorable markets, partially offset by money market mutual fund fee waivers.

The following tables provide a breakdown of the C&IS assets under custody and under management.

TABLE 6: C&IS ASSETS UNDER CUSTODY

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
North America	**$ 5,746.4**	$ 4,516.0	$ 3,693.4	**27 %**	22 %
Europe, Middle East, and Africa	**3,478.2**	2,998.5	2,538.6	**16**	18
Asia Pacific	**976.2**	820.3	589.2	**19**	39
Securities Lending	**186.9**	163.0	149.8	**15**	9
Total Assets Under Custody	**$ 10,387.7**	$ 8,497.8	$ 6,971.0	**22 %**	22 %

TABLE 7: C&IS ASSETS UNDER MANAGEMENT

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
North America	**$ 676.8**	$ 588.4	$ 493.1	**15 %**	19 %
Europe, Middle East, and Africa	**143.5**	125.2	113.3	**15**	11
Asia Pacific	**50.3**	40.9	34.6	**23**	18
Securities Lending	**186.9**	163.0	149.8	**15**	9
Total Assets Under Management	**$ 1,057.5**	$ 917.5	$ 790.8	**15 %**	16 %

Cash and other assets deposited by investment firms as collateral for securities borrowed from custody clients are managed by Northern Trust and are included in assets under custody and under management. This securities lending collateral totaled $186.9 billion and $163.0 billion at December 31, 2020 and 2019, respectively.

Wealth Management

Wealth Management fee income is calculated primarily based on market values and is impacted by both one-month and one-quarter lagged asset values. Wealth Management fees increased from 2019 to 2020, primarily due to favorable markets and new business, partially offset by money market mutual fund fee waivers. The following tables provide a summary of Wealth Management assets under custody and under management.

TABLE 8: WEALTH MANAGEMENT ASSETS UNDER CUSTODY

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Global Family Office	**$ 600.7**	$ 474.1	$ 405.5	**27 %**	17 %
Central	**120.0**	115.1	88.2	**4**	31
East	**89.1**	81.7	72.7	**9**	12
West	**65.3**	64.8	56.5	**1**	15
Total Assets Under Custody	**$ 875.1**	$ 735.7	$ 622.9	**19 %**	18 %

TABLE 9: WEALTH MANAGEMENT ASSETS UNDER MANAGEMENT

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Global Family Office	**$ 114.0**	$ 94.2	$ 83.5	**21 %**	13 %
Central	**109.3**	104.4	96.2	**5**	9
East	**73.3**	66.8	57.0	**10**	17
West	**51.2**	48.4	41.9	**6**	16
Total Assets Under Management	**$ 347.8**	$ 313.8	$ 278.6	**11 %**	13 %

The Wealth Management regions shown are comprised of the following: Central includes Illinois, Michigan, Minnesota, Missouri, Ohio and Wisconsin; East includes Connecticut, Delaware, Florida, Georgia, Massachusetts, New York, Pennsylvania, and Washington, D.C.; West includes Arizona, California, Colorado, Nevada, Texas and Washington. Global Family Office provides specialized asset management, investment consulting, global custody, fiduciary, and private banking services to ultra-wealthy domestic and international clients.

Market Indices

The following tables present selected market indices and the percentage changes year over year to provide context regarding equity and fixed income market impacts on the Corporation's results.

TABLE 10: EQUITY MARKET INDICES

	DAILY AVERAGES			YEAR-END		
	2020	2019	**CHANGE**	**2020**	2019	**CHANGE**
S&P 500	**3,218**	2,912	**11 %**	**3,756**	3,231	**16 %**
MSCI EAFE (U.S. dollars)	**1,853**	1,891	**(2)**	**2,148**	2,037	**5**
MSCI EAFE (local currency)	**1,074**	1,118	**(4)**	**1,174**	1,190	**(1)**

TABLE 11: FIXED INCOME MARKET INDICES

	AS OF DECEMBER 31,		
	2020	2019	**CHANGE**
Barclays Capital U.S. Aggregate Bond Index	**2,392**	2,225	**8 %**
Barclays Capital Global Aggregate Bond Index	**559**	512	**9**

Client Assets

Northern Trust, in the normal course of business, holds assets under custody/administration and management in a fiduciary or agency capacity for its clients. In accordance with GAAP, these assets are not assets of Northern Trust and are not included in its consolidated balance sheets. AUC/A and assets under management are a driver of our Trust, Investment and Other Servicing Fees. For the purposes of disclosing AUC/A, to the extent that both custody and administration services are provided, the value of the assets is included only once.

At December 31, 2020, AUC/A increased from December 31, 2019, primarily reflecting net inflows, favorable markets, and favorable currency translation. Assets under custody, a component of AUC/A, at December 31, 2020, increased from December 31, 2019, and included $7.42 trillion of global custody assets, compared to $5.89 trillion at December 31, 2019.

The following table presents AUC/A by reporting segment.

TABLE 12: ASSETS UNDER CUSTODY/ADMINISTRATION BY REPORTING SEGMENT

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 /2019**	2019 /2018
Corporate & Institutional Services	**$ 13,653.1**	$ 11,311.6	$ 9,490.5	**21 %**	19 %
Wealth Management	**879.4**	738.8	634.8	**19**	16
Total Assets Under Custody/Administration	**$ 14,532.5**	$ 12,050.4	$ 10,125.3	**21 %**	19 %

The following table presents assets under custody, a component of AUC/A, by reporting segment.

TABLE 13: ASSETS UNDER CUSTODY BY REPORTING SEGMENT

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 /2019**	2019 / 2018
Corporate & Institutional Services	**$ 10,387.7**	$ 8,497.8	$ 6,971.0	**22 %**	22 %
Wealth Management	**875.1**	735.7	622.9	**19**	18
Total Assets Under Custody	**$ 11,262.8**	$ 9,233.5	$ 7,593.9	**22 %**	22 %

Consolidated assets under custody increased from the prior year, primarily reflecting net inflows, favorable markets, and favorable currency translation.

The following table presents the investment allocation of Northern Trust's custodied assets by reporting segment.

TABLE 14: ALLOCATION OF ASSETS UNDER CUSTODY

	DECEMBER 31,								
	2020			2019			2018		
	C&IS	**WM**	**TOTAL**	**C&IS**	**WM**	**TOTAL**	**C&IS**	**WM**	**TOTAL**
Equities	**46 %**	**62 %**	**47 %**	45 %	59 %	46 %	44 %	54 %	45 %
Fixed Income Securities	**36**	**15**	**34**	37	18	35	39	20	37
Cash and Other Assets	**16**	**23**	**17**	16	23	17	15	26	16
Securities Lending Collateral	**2**	**—**	**2**	2	—	2	2	—	2

The following table presents Northern Trust's assets under custody by investment type.

TABLE 15: ASSETS UNDER CUSTODY BY INVESTMENT TYPE

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Equities	**$ 5,293.9**	$ 4,298.6	$ 3,379.5	23 %	27 %
Fixed Income Securities	**3,870.9**	3,236.5	2,822.4	20	15
Cash and Other Assets	**1,911.1**	1,535.3	1,242.1	24	24
Securities Lending Collateral	**186.9**	163.1	149.9	15	9
Total Assets Under Custody	**$ 11,262.8**	$ 9,233.5	$ 7,593.9	22 %	22 %

The following table presents Northern Trust's assets under management by reporting segment.

TABLE 16: ASSETS UNDER MANAGEMENT BY REPORTING SEGMENT

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Corporate & Institutional Services	**$ 1,057.5**	$ 917.5	$ 790.8	**15 %**	16 %
Wealth Management	**347.8**	313.8	278.6	**11**	13
Total Assets Under Management	**$ 1,405.3**	$ 1,231.3	$ 1,069.4	**14 %**	15 %

Assets under management at the end of 2020 increased from 2019. The increase primarily reflected favorable markets and net inflows.

The following tables present the investment allocation and management style of Northern Trust's assets under management by reporting segment.

TABLE 17: ASSETS UNDER MANAGEMENT BY INVESTMENT TYPE

	DECEMBER 31,								
	2020			2019			2018		
	C&IS	**WM**	**TOTAL**	**C&IS**	**WM**	**TOTAL**	**C&IS**	**WM**	**TOTAL**
Equities	**52%**	**52%**	**52%**	53%	53%	53%	51%	47%	50%
Fixed Income Securities	**11**	**25**	**15**	12	25	16	13	26	17
Cash and Other Assets	**19**	**23**	**20**	17	22	18	17	27	19
Securities Lending Collateral	**18**	**—**	**13**	18	—	13	19	—	14

TABLE 18: ASSETS UNDER MANAGEMENT BY MANAGEMENT STYLE

	DECEMBER 31,								
	2020			2019			2018		
	C&IS	**WM**	**TOTAL**	**C&IS**	**WM**	**TOTAL**	**C&IS**	**WM**	**TOTAL**
Index	**58 %**	**24 %**	**50 %**	59 %	27 %	51 %	57 %	25 %	49 %
Active	**38**	**39**	**38**	37	36	37	38	39	38
Multi-Manager	**4**	**8**	**5**	4	8	5	5	7	5
Other	**—**	**29**	**7**	—	29	7	—	29	8

Other Noninterest Income

The components of other noninterest income, and a discussion of significant changes during 2020 and 2019, are provided below.

TABLE 19: OTHER NONINTEREST INCOME

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Foreign Exchange Trading Income	**$ 290.4**	$ 250.9	$ 307.2	**16 %**	(18)%
Treasury Management Fees	**45.4**	44.5	51.8	**2**	(14)
Security Commissions and Trading Income	**133.2**	103.6	98.3	**29**	5
Other Operating Income	**194.0**	145.5	127.5	**33**	14
Investment Security Gains (Losses), net	**(0.4)**	(1.4)	(1.0)	**N/M**	N/M
Total Other Noninterest Income	**$ 662.6**	$ 543.1	$ 583.8	**22 %**	(7)%

Foreign Exchange Trading Income

Northern Trust provides foreign exchange services in the normal course of business as an integral part of its global custody services. Active management of currency positions, within conservative limits, also contributes to foreign exchange trading income. Foreign Exchange Trading Income in 2020 increased from 2019, primarily driven by higher client volumes and increased market volatility, partially offset by lower foreign exchange swap activity in Treasury.

Treasury Management Fees

Treasury Management Fees, generated from cash and treasury management products and services provided to clients, in 2020 increased from 2019.

Security Commissions and Trading Income

Security Commissions and Trading Income, generated primarily from securities brokerage services provided by Northern Trust Securities, Inc., in 2020 increased from 2019, primarily driven by higher core brokerage revenue and revenue from interest rate swaps.

Other Operating Income

The components of Other Operating Income are provided in the following table.

TABLE 20: OTHER OPERATING INCOME

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Loan Service Fees	**$ 52.5**	$ 48.0	$ 48.9	**9 %**	(2)%
Banking Service Fees	**46.1**	45.6	46.4	**1**	(2)
Other Income	**95.4**	51.9	32.2	**84**	60
Total Other Operating Income	**$ 194.0**	$ 145.5	$ 127.5	**33 %**	14 %

Other income in 2020 increased from 2019, primarily due to higher income related to a bank-owned life insurance program implemented during 2019, a charge in the prior year related to the decision made to sell substantially all of the lease portfolio, and higher miscellaneous income.

Investment Security Gains (Losses), Net

Losses in 2019 included $0.3 million of charges related to the other-than-temporary impairment (OTTI) of certain Community Reinvestment Act (CRA) eligible held-to-maturity debt securities. ASU 2016-13, adopted on January 1, 2020, replaced the legacy OTTI model with an estimated credit loss model. Refer to the caption "Investment Security Gains and Losses" in Note 4, "Securities," and the caption "Allowance for Debt Securities Held to Maturity Securities Portfolio" in Note 7, "Allowance for Credit Losses" included under Item 8, "Financial Statements and Supplementary Data."

Net Interest Income

Net Interest Income is defined as the total of Interest Income and amortized fees on earning assets, less Interest Expense on deposits and borrowed funds, adjusted for the impact of interest-related hedging activity. Earning assets — including Federal Funds Sold, Securities Purchased under Agreements to Resell, Interest-Bearing Due From and Deposits with Banks, Federal Reserve and Other Central Bank Deposits and Other, Securities, and Loans and Leases — are financed by a large base of interest-bearing funds that include client deposits, short-term borrowings, Senior Notes and Long-Term Debt. Short-term borrowings include Federal Funds Purchased, Securities Sold Under Agreements to Repurchase, and Other Borrowings. Earning assets also are funded by noninterest-related funds, which include demand deposits and Stockholders’ Equity. Net Interest Income is subject to variations in the level and mix of earning assets and interest-bearing funds and their relative sensitivity to interest rates. In addition, the levels of nonaccruing assets and client compensating deposit balances used to pay for services impact Net Interest Income.

Net interest margin is the difference between what we earn on our assets and what we pay for deposits and other sources of funding. The direction and level of interest rates are important factors in our earnings. Net interest margin is calculated by dividing annualized Net Interest Income by average interest-earning assets.

Net Interest Income stated on an FTE basis is a non-GAAP financial measure that facilitates the analysis of asset yields. Management believes an FTE presentation provides a clearer indication of net interest margins for comparative purposes. When adjusted to an FTE basis, yields on taxable, nontaxable, and partially taxable assets are comparable; however, the adjustment to an FTE basis has no impact on Net Income. A reconciliation of Net Interest Income on a GAAP basis to Net Interest Income on an FTE basis is provided on page 85.

The following tables present an analysis of average daily balances and interest rates affecting Net Interest Income and an analysis of Net Interest Income changes.

TABLE 21: AVERAGE CONSOLIDATED BALANCE SHEETS WITH ANALYSIS OF NET INTEREST INCOME (INTEREST AND RATE ON A FULLY TAXABLE EQUIVALENT BASIS)[1]

	2020			2019			2018		
($ In Millions)	**INTEREST**	**AVERAGE BALANCE**	**AVERAGE RATE**[7]	INTEREST	AVERAGE BALANCE	AVERAGE RATE[7]	INTEREST	AVERAGE BALANCE	AVERAGE RATE[7]
INTEREST-EARNING ASSETS									
Federal Reserve and Other Central Bank Deposits and Other[2]	**$ 28.8**	**$ 27,921.4**	**0.10 %**	$ 181.7	$ 18,527.7	0.98 %	$ 207.1	$ 23,899.3	0.87 %
Interest-Bearing Due from and Deposits with Banks[3]	**22.4**	**5,400.8**	**0.41**	72.4	5,996.7	1.21	70.0	6,022.8	1.16
Federal Funds Sold	**—**	**2.3**	**1.37**	0.4	12.8	2.73	0.4	20.5	2.18
Securities Purchased under Agreements to Resell	**3.9**	**1,253.1**	**0.31**	17.5	835.0	2.10	32.9	1,478.3	2.22
Securities									
U.S. Government	**63.0**	**4,256.7**	**1.48**	110.4	5,296.5	2.09	108.3	5,737.1	1.89
Obligations of States and Political Subdivisions	**48.2**	**2,194.3**	**2.20**	24.4	980.5	2.49	13.9	725.2	1.91
Government Sponsored Agency	**409.0**	**23,970.4**	**1.71**	583.6	22,634.1	2.58	456.0	20,682.7	2.20
Other[4]	**324.1**	**25,635.1**	**1.26**	381.6	21,773.3	1.75	367.5	23,136.5	1.59
Total Securities	**844.3**	**56,056.5**	**1.51**	1,100.0	50,684.4	2.17	945.7	50,281.5	1.88
Loans and Leases[5]	**778.5**	**33,498.8**	**2.32**	1,160.7	31,052.8	3.74	1,106.5	32,028.6	3.45
Total Interest-Earning Assets	**1,677.9**	**124,132.9**	**1.35**	2,532.7	107,109.4	2.36	2,362.6	113,731.0	2.08
Allowance for Credit Losses	**—**	**(178.0)**	**—**	—	(111.4)	—	—	(126.3)	—
Cash and Due from Banks and Other Central Bank Deposits[6]	**—**	**2,603.0**	**—**	—	2,393.6	—	—	2,534.3	—
Buildings and Equipment	**—**	**509.3**	**—**	—	425.6	—	—	438.5	—
Client Security Settlement Receivables	**—**	**1,357.5**	**—**	—	1,070.4	—	—	1,002.0	—
Goodwill	**—**	**695.4**	**—**	—	682.5		—	642.5	—
Other Assets	**—**	**7,691.0**	**—**	—	5,981.3	—	—	4,724.6	—
Total Assets	**$ —**	**$136,811.1**	**— %**	$ —	$117,551.4	— %	$ —	$122,946.6	— %
AVERAGE SOURCE OF FUNDS									
Deposits									
Savings, Money Market, and Other	**$ 47.6**	**$ 23,396.4**	**0.20 %**	$ 160.8	$ 16,577.8	0.97 %	$ 82.0	$ 15,149.3	0.54 %
Savings Certificates and Other Time	**16.5**	**1,266.4**	**1.30**	16.2	867.5	1.86	7.8	870.6	0.90
Non-U.S. Offices – Interest-Bearing	**(15.7)**	**60,486.3**	**(0.03)**	311.9	54,885.2	0.57	294.8	58,556.6	0.50
Total Interest-Bearing Deposits	**48.4**	**85,149.1**	**0.06**	488.9	72,330.5	0.68	384.6	74,576.5	0.52
Federal Funds Purchased	**2.2**	**980.9**	**0.22**	25.9	1,267.4	2.05	50.3	2,762.8	1.82
Securities Sold under Agreements to Repurchase	**1.0**	**218.3**	**0.47**	6.4	339.0	1.89	7.8	525.2	1.48
Other Borrowings	**45.3**	**6,401.1**	**0.71**	181.7	7,752.5	2.34	150.1	7,495.5	2.00
Senior Notes	**72.7**	**3,233.8**	**2.24**	72.6	2,389.1	3.04	53.4	1,704.0	3.13
Long-Term Debt	**26.5**	**1,189.2**	**2.24**	38.3	1,139.0	3.36	45.0	1,296.8	3.47
Floating Rate Capital Debt	**4.2**	**277.7**	**1.52**	8.2	277.6	2.98	7.5	277.6	2.72
Total Interest-Related Funds	**200.3**	**97,450.1**	**0.21**	822.0	85,495.1	0.96	698.7	88,638.4	0.79
Interest Rate Spread	**—**	**—**	**1.14**	—	—	1.40	—	—	1.29
Demand and Other Noninterest-Bearing Deposits	**—**	**23,362.0**	**—**	—	17,455.5	—	—	20,526.6	—
Other Liabilities	**—**	**4,806.4**	**—**	—	3,952.4	—	—	3,552.7	—
Stockholders' Equity	**—**	**11,192.6**	**—**	—	10,648.4	—	—	10,228.9	—
Total Liabilities and Stockholders' Equity	**$ —**	**$136,811.1**	**— %**	$ —	$117,551.4	— %	$ —	$122,946.6	— %
Net Interest Income/Margin (FTE Adjusted)	**$ 1,477.6**	**$ —**	**1.19 %**	$ 1,710.7	$ —	1.60 %	$ 1,663.9	$ —	1.46 %
Net Interest Income/Margin (Unadjusted)	**$ 1,443.2**	**$ —**	**1.16 %**	$ 1,677.9	$ —	1.57 %	$ 1,622.7	$ —	1.43 %

Note: Net Interest Income (FTE Adjusted), a non-GAAP financial measure, includes adjustments to a fully taxable equivalent basis for loans and securities. The adjustments are based on a federal income tax rate of 21.0%, where the rate is adjusted for applicable state income taxes, net of related federal tax benefit. Total taxable equivalent interest adjustments amounted to $34.4 million in 2020, $32.8 million in 2019 and $41.2 million in 2018. A reconciliation of Net Interest Income and net interest margin on a GAAP basis to Net Interest Income and net interest margin on an FTE basis (each of which is a non-GAAP financial measure) is provided on page 85. Net interest margin is calculated by dividing annualized Net Interest Income by average interest-earning assets. Interest revenue on cash collateral positions is reported above in Interest-Bearing Due From and Deposits with Banks and in Loans and Leases. Interest Expense on cash collateral positions is reported above in Non-U.S. Offices Interest-Bearing Deposits. Related cash collateral received from and deposited with derivative counterparties is recorded net of the associated derivative contract in Other Assets and Other Liabilities, respectively.

(1) Northern Trust's non-U.S. activities are primarily related to its asset servicing, asset management, foreign exchange, cash management, and commercial banking businesses. The operations of Northern Trust are managed on a reporting segment basis and include components of both U.S and non-U.S. source income and assets. Non-U.S. source income and assets are not separately identified in Northern Trust's internal management reporting system. However, Northern Trust is required to disclose non-U.S. activities based on the domicile of the customer. Due to the complex and integrated nature of Northern Trust's activities, it is difficult to segregate with precision revenues, expenses and assets between U.S. and non-U.S.-domiciled customers. On the basis of averages, the percentage of total assets attributable to foreign activities was 20%, 23% and 25% as of December 31, 2020, 2019 and 2018, respectively. On the basis of averages, the percentage of total liabilities attributable to foreign activities was 56%, 53% and 54% as of December 31, 2020, 2019 and 2018, respectively. For additional information, refer to the Geographic Area Information section of Note 32, "Reporting Segments and Related Information," provided in Item 8, "Financial Statements and Supplementary Data."

(2) Federal Reserve and Other Central Bank Deposits and Other includes collateral deposits with certain securities depositories and clearing houses, which are classified in Other Assets on the consolidated balance sheets.

(3) Interest-Bearing Due from and Deposits with Banks includes the interest-bearing component of Cash and Due from Banks and Interest-Bearing Deposits with Banks as presented on the consolidated balance sheets.

(4) Other securities include certain community development investments and Federal Home Loan Bank and Federal Reserve stock, which are classified in Other Assets on the consolidated balance sheets.

(5) Average balances include nonaccrual loans. Lease financing receivable balances are reduced by deferred income.

(6) Cash and Due from Banks and Other Central Bank Deposits includes the noninterest-bearing component of Federal Reserve and Other Central Bank Deposits on the consolidated balance sheets.

(7) Rate calculations are based on actual balances rather than the rounded amounts presented in the Average Consolidated Balance Sheets with Analysis of Net Interest Income.

TABLE 22: ANALYSIS OF NET INTEREST INCOME CHANGES DUE TO VOLUME AND RATE

(INTEREST AND RATE ON A FULLY TAXABLE EQUIVALENT BASIS)	**2020/2019 CHANGE DUE TO**			2019/2018 CHANGE DUE TO		
(In Millions)	**AVERAGE BALANCE**	**AVERAGE RATE**	**NET (DECREASE) INCREASE**	AVERAGE BALANCE	AVERAGE RATE	NET (DECREASE) INCREASE
Increase (Decrease) in Net Interest Income (FTE)						
Federal Reserve and Other Central Bank Deposits and Other	**$ 62.5**	**$ (215.4)**	**$ (152.9)**	$ (58.1)	$ 32.7	$ (25.4)
Interest-Bearing Due from and Deposits with Banks	**(6.5)**	**(43.5)**	**(50.0)**	(0.3)	2.7	2.4
Federal Funds Sold	**(0.2)**	**(0.2)**	**(0.4)**	—	—	—
Securities Purchased under Agreements to Resell	**6.1**	**(19.7)**	**(13.6)**	(36.5)	21.1	(15.4)
Securities						
U.S. Government	**(19.0)**	**(28.4)**	**(47.4)**	(5.4)	7.5	2.1
Obligations of States and Political Subdivisions	**26.9**	**(3.1)**	**23.8**	5.7	4.8	10.5
Government Sponsored Agency	**32.7**	**(207.3)**	**(174.6)**	45.1	82.5	127.6
Other	**61.6**	**(119.1)**	**(57.5)**	(20.0)	34.1	14.1
Total Securities	**102.2**	**(357.9)**	**(255.7)**	25.4	128.9	154.3
Loans and Leases	**177.6**	**(559.8)**	**(382.2)**	(89.2)	143.4	54.2
Total Interest Income	**$ 341.7**	**$ (1,196.5)**	**$ (854.8)**	$ (158.7)	$ 328.8	$ 170.1
Interest-Bearing Deposits						
Savings, Money Market and Other	**$ 48.5**	**$ (161.7)**	**$ (113.2)**	$ 8.3	$ 70.5	$ 78.8
Savings Certificates and Other Time	**(9.3)**	**9.6**	**0.3**	—	8.4	8.4
Non-U.S. Offices - Interest Bearing	**29.2**	**(356.8)**	**(327.6)**	(13.9)	31.0	17.1
Total Interest-Bearing Deposits	**68.4**	**(508.9)**	**(440.5)**	(5.6)	109.9	104.3
Federal Funds Purchased	**(4.8)**	**(18.9)**	**(23.7)**	(31.9)	7.5	(24.4)
Securities Sold under Agreements to Repurchase	**(1.7)**	**(3.7)**	**(5.4)**	(6.5)	5.1	(1.4)
Other Borrowings	**(27.3)**	**(109.1)**	**(136.4)**	5.3	26.3	31.6
Senior Notes	**22.0**	**(21.9)**	**0.1**	20.6	(1.4)	19.2
Long-Term Debt	**13.5**	**(25.3)**	**(11.8)**	(5.6)	(1.1)	(6.7)
Floating Rate Capital Debt	**—**	**(4.0)**	**(4.0)**	—	0.7	0.7
Total Interest Expense	**$ 70.1**	**$ (691.8)**	**$ (621.7)**	$ (23.7)	$ 147.0	$ 123.3
(Decrease) Increase in Net Interest Income (FTE)	**$ 271.6**	**$ (504.7)**	**$ (233.1)**	$ (135.0)	$ 181.8	$ 46.8

Note: Changes not due solely to average balance changes or rate changes are allocated proportionately to average balance and rate based on their relative absolute magnitudes.

Net Interest Income in 2020 decreased from 2019. Net Interest Income, stated on an FTE basis decreased from 2019, due to a lower net interest margin, partially offset by higher levels of average earning assets. Average earning assets increased in 2020 from 2019, primarily reflecting higher levels of short-term interest bearing deposits, Securities, and Loans and Leases. Funding of the balance sheet reflected higher levels of client deposits. The increase in average client deposits resulted from the large inflows experienced at the end of the first quarter of 2020, and these balances were largely maintained throughout the year.

The net interest margin in 2020 decreased from 2019. The net interest margin on an FTE basis in 2020 decreased from 2019, primarily due to lower interest rates. Low levels of market interest rates are expected to continue to impact our net interest income.

Federal Reserve and Other Central Bank Deposits and Other averaged $27.9 billion in 2020, which increased $9.4 billion, or 51%, from $18.5 billion in 2019, which resulted from significant deposit inflows. The higher level of client deposits were primarily placed with the Federal Reserve and other central banks and in the securities portfolio. Average Securities were $56.1 billion and increased $5.4 billion, or 11%, from $50.7 billion in the prior-year period and include certain community development investments, Federal Home Loan Bank stock, and Federal Reserve stock of $769.6 million, $202.9 million and $63.5 million, respectively, which are recorded in Other Assets on the consolidated balance sheets. Average taxable Securities were $50.9 billion in 2020 and $43.9 billion in 2019. Average nontaxable Securities, which represent securities that are primarily exempt from U.S. federal and state income taxes, were $5.2 billion in 2020 and $6.8 billion in 2019. Interest-Bearing Due From and Deposits with Banks averaged $5.4 billion in 2020 and $6.0 billion in 2019.

Loans and Leases averaged $33.5 billion, which increased $2.4 billion, or 8%, from $31.1 billion in 2019, primarily reflecting higher levels of commercial and institutional, private client, commercial real estate, and non-U.S. loans, partially offset by a decrease in residential real estate loans. Commercial and institutional loans averaged $10.3 billion and increased $1.3 billion, or 15%, from $9.0 billion for the prior-year period. Private client loans averaged $11.5 billion and increased $706.9 million, or 7%, from $10.7 billion for the prior-year period. Commercial real estate loans averaged $3.3 billion and increased $335.6 million, or 12%, from $2.9 billion for the prior-year period. Non-U.S. loans averaged $2.0 billion and increased $262.7 million, or 15.3%, from $1.7 billion for the prior-year period. Residential real estate loans averaged $6.1 billion and decreased $180.9 million, or 3%, from $6.3 billion for the prior-year period.

Northern Trust utilizes a diverse mix of funding sources. Average Interest-Bearing Deposits increased $12.8 billion, or 18%, to $85.1 billion in 2020 from $72.3 billion in 2019. Average Interest-Related Funds increased $12.0 billion, or 14%, to $97.5 billion in 2020 from $85.5 billion in 2019. The balances within short-term borrowing classifications vary based on funding requirements and strategies, interest rate levels, changes in the volume of lower-cost deposit sources, and the availability of collateral to secure these borrowings. Average net noninterest-related funds increased $5.1 billion, or 23%, to $26.7 billion in 2020 from $21.6 billion in 2019, primarily resulting from higher levels of Demand and Other Noninterest-Bearing Deposits and Other Liabilities, partially offset by Other Assets. Average Demand and Other Noninterest-Bearing Deposits increased $5.9 billion, or 34%, to $23.4 billion in 2020 from $17.5 billion in 2019. The average rate on total source of funds was 0.16% in 2020 and 0.77% in 2019.

Interest expense for Interest-Bearing Deposits in the current year was driven by low and negative interest rates for Non-U.S. Offices Interest-Bearing Deposits and low interest rates on domestic Interest-Bearing Deposits. Average Non-U.S. Offices Interest-Bearing Deposits comprised 71% of total average Interest-Bearing Deposits for the year ended December 31, 2020.

Stockholders' Equity averaged $11.2 billion in 2020, compared with $10.6 billion in 2019. The increased Stockholders' Equity of $544.2 million, or 5%, was primarily attributable to earnings and accumulated other comprehensive income since the prior-year period, partially offset by the repurchase of common stock pursuant to the Corporation's share repurchase program, the redemption of preferred stock during the first quarter of 2020, and dividend declarations. During the year ended December 31, 2020, the Corporation maintained its quarterly common stock dividend at $0.70 per share and repurchased 3,276,589 shares of common stock, returning $891.8 million in capital to common stockholders, compared to $1.7 billion in 2019.

In July 2018, the Board of Directors approved a stock repurchase authorization to repurchase up to 25.0 million shares of the Corporation's common stock. Shares are repurchased by the Corporation to, among other things, manage the Corporation's capital levels. Repurchased shares are used for general purposes, including the issuance of shares under stock option and other incentive plans. The Corporation suspended this program on March 16, 2020. Subsequent to the Corporation suspending its open-market share repurchase program, the only shares repurchased were shares of common stock withheld upon the vesting of share-based compensation to satisfy tax withholding obligations.

Beginning in the second quarter of 2020, the Federal Reserve announced certain measures to ensure that large financial institutions, including Northern Trust, remain resilient despite the economic uncertainty resulting from the ongoing COVID-19 pandemic. Specifically, for the third and fourth quarters of 2020, no share repurchases were permitted by these institutions and dividend payments were limited to the amount paid in the second quarter and could not exceed the payor's average net income for the four preceding quarters. On December 18, 2020, the Federal Reserve again extended its capital distribution limits into the first quarter of 2021 with certain modifications, which include continuing to limit dividend payments based on recent income and limiting share repurchases based on recent income. During the first quarter of 2021, the Corporation restarted its share repurchase program in accordance with such limitations. The repurchase authorization approved by the Board of Directors has no expiration date, thus the Corporation retains the ability to resume repurchases thereunder when circumstances warrant and applicable regulations permit. Please refer to Note 15, "Stockholders' Equity," provided in Item 8, "Financial Statements and Supplementary Data."

Provision for Credit Losses

The Corporation adopted ASU No. 2016-13 on January 1, 2020, which significantly changed the way impairment of financial instruments is recognized by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of financial instruments. For more information on the adoption of ASU 2016-13, please refer to Note 2, "Recent Accounting Pronouncements," provided in Item 8, "Financial Statements and Supplementary Data."

The Provision for Credit Losses was a provision of $125.0 million in 2020, as compared to a credit provision of $14.5 million in 2019. The provision for 2020 primarily reflected an increase in the reserve evaluated on a collective basis. The increase in the collective basis reserve was primarily driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts, with increases primarily in the commercial and institutional and commercial real estate portfolios. The prior-year credit provision primarily reflected a decrease in the inherent reserve related to the residential real estate portfolio due to a reduction in outstanding loans and improved credit quality and reductions to the specific reserve related to the commercial and institutional and residential real estate portfolios, partially offset by an increase in the inherent reserve related to the private client portfolio due to an increase in outstanding loans and lower credit quality.

Net charge-offs in 2020 totaled $3.2 million resulting from $9.7 million of charge-offs and $6.5 million of recoveries, compared to net recoveries of $0.7 million in the prior-year resulting from $6.5 million of charge-offs and $7.2 million of recoveries.

Nonaccrual assets at December 31, 2020 increased 53% from the prior year-end. Residential real estate, commercial real estate, commercial and institutional, and private client loans accounted for 47%, 31%, 20%, and 2%, respectively, of nonaccrual loans and leases at December 31, 2020. Residential real estate, commercial and institutional, commercial real estate, private client, and non-U.S. loans accounted for 85%, 9%, 4%, 1%, and 1%, respectively, of total nonaccrual loans and leases at December 31, 2019. For additional discussion of the Allowance for Credit Losses, refer to the "Asset Quality" section.

Noninterest Expense

Noninterest Expense for 2020 increased from 2019, primarily reflecting increased Compensation, Equipment and Software, Employee Benefits, Occupancy, and Other Operating Expense, partially offset by lower Outside Services. Noninterest Expense for 2020 included severance-related charges of $55.0 million in connection with a reduction in force, a $43.4 million charge related to a corporate action processing error, and Occupancy expense related to an early lease exit arising from a workplace real estate strategy of $11.9 million.

The components of Noninterest Expense and a discussion of significant changes during 2020 and 2019 are provided below.

TABLE 23: NONINTEREST EXPENSE

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Compensation	**$ 1,947.1**	$ 1,859.0	$ 1,806.9	**5 %**	3 %
Employee Benefits	**387.7**	355.2	356.7	**9**	—
Outside Services	**763.1**	774.5	739.4	**(1)**	5
Equipment and Software	**673.5**	612.1	582.2	**10**	5
Occupancy	**230.1**	212.9	201.1	**8**	6
Other Operating Expense	**346.7**	329.8	330.6	**5**	—
Total Noninterest Expense	**$ 4,348.2**	$ 4,143.5	$ 4,016.9	**5 %**	3 %

Compensation

Compensation expense, the largest component of Noninterest Expense, increased in 2020 from 2019, primarily reflecting higher salary expense driven by staff growth and base pay adjustments, $52.5 million of severance-related charges in connection with a reduction in force, and a one-time supplemental payment to certain employees in response to the COVID-19 pandemic, partially offset by lower cash-based incentives and long-term performance-based incentive expense. Staff on a full-time equivalent basis totaled approximately 20,900 at December 31, 2020, up 6% from approximately 19,800 at December 31, 2019.

Employee Benefits

Employee Benefits expense in 2020 increased from 2019, primarily reflecting higher retirement plan expenses.

Outside Services

Outside Services expense in 2020 decreased from 2019, primarily due to lower data processing and consulting services, partially offset by higher sub-custodian expenses. Included in Outside Services is $2.5 million of outplacement costs associated with the reduction in force.

Equipment and Software

Equipment and Software expense in 2020 increased from 2019, primarily reflecting higher depreciation and amortization and software support costs.

Occupancy

Occupancy expense in 2020 increased from 2019, primarily reflecting higher rent arising from workplace real estate strategies, including $11.9 million of expense related to an early lease exit, partially offset by an asset retirement obligation reduction resulting from a lease renegotiation.

Other Operating Expense

The components of Other Operating Expense are provided in the following table.

TABLE 24: OTHER OPERATING EXPENSE

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Business Promotion	**$ 59.2**	$ 104.2	$ 98.3	**(43)%**	6 %
Staff Related	**29.4**	42.8	33.6	**(31)**	27
FDIC Insurance Premiums	**11.8**	9.9	27.4	**19**	(64)
Other Intangibles Amortization	**16.9**	16.6	17.4	**2**	(4)
Other Expenses	**229.4**	156.3	153.9	**47**	2
Total Other Operating Expense	**$ 346.7**	$ 329.8	$ 330.6	**5 %**	— %

Other Operating Expense in the current year increased compared to the prior year primarily due to a $43.4 million charge related to a corporate action processing error as well as increases in mutual fund co-administration fees, partially offset by lower business promotion expense due to reduced business travel and lower staff-related expense.

Provision for Income Taxes

The 2020 Provision for Income Taxes was $418.3 million, representing an effective rate of 25.7%. This compares with a Provision for Income Taxes of $451.9 million and an effective rate of 23.2% in 2019. The increase in the effective tax rate was primarily driven by $26.8 million of tax expense related to the reversal of tax benefits previously recognized through earnings and higher taxes payable on the income of the Corporation's non-U.S. branches.

See Note 22, "Income Taxes," provided in Item 8, "Financial Statements and Supplementary Data," for more information on income taxes.

REPORTING SEGMENTS AND RELATED INFORMATION

The following information summarizes our consolidated results of operations by reporting segment for 2020 compared to 2019. For a discussion related to the consolidated results of operations by reporting segment for 2019 compared to 2018, refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our 2019 Form 10-K, which was filed with the SEC on February 25, 2020.

Northern Trust is organized around its two client-focused reporting segments: C&IS and Wealth Management. Asset management and related services are provided to C&IS and Wealth Management clients primarily by the Asset Management business. The revenue and expenses of Asset Management and certain other support functions are allocated fully to C&IS and Wealth Management.

Reporting segment financial information, presented on an internal management-reporting basis, is determined by accounting systems used to allocate revenue and expense to each segment, and incorporates processes for allocating assets, liabilities, equity and the applicable interest income and expense utilizing a funds transfer pricing (FTP) methodology. Under the methodology, assets and liabilities receive a funding charge or credit that considers interest rate risk, liquidity risk, and other product characteristics on an instrument level. Equity is allocated to the reporting segments based on a variety of factors including, but not limited to, risk, regulatory considerations, and internal metrics. Allocations of capital and certain corporate expense may not be representative of levels that would be required if the segments were independent entities. The accounting policies used for management reporting are consistent with those described in Note 1, "Summary of Significant Accounting Policies," provided in Item 8, "Financial Statements and Supplementary Data." Transfers of income and expense items are recorded at cost; there is no consolidated profit or loss on sales or transfers between reporting segments. Northern Trust's presentations are not necessarily consistent with similar information for other financial institutions.

Effective January 1, 2019, Northern Trust implemented several enhancements to its FTP methodology, including the allocation of contingent liquidity charges to C&IS and Wealth Management client instruments and products. These methodology enhancements affect the results of each reporting segment. Due to the lack of historical information, segment results for periods ended prior to January 1, 2019 have not been revised to reflect the methodology enhancements.

Also effective January 1, 2019, revenues, expenses and average assets are allocated to C&IS and Wealth Management, with the exception of non-recurring activities such as certain costs associated with acquisitions, divestitures, litigation, restructuring, and tax adjustments not directly attributable to a specific reporting segment.

For reporting periods ended prior to January 1, 2019, income and expense associated with the wholesale funding activities and investment portfolios of the Corporation and the Bank, as well as certain corporate-based expense, executive-level compensation and nonrecurring items, were not allocated to C&IS and Wealth Management, and were reported in Treasury and Other.

Reporting segment results are subject to reclassification when organizational changes are made. The results are also subject to refinements in revenue and expense allocation methodologies, which are typically reflected on a prospective basis. The following table presents the earnings and average assets for the Corporation.

TABLE 25: CONSOLIDATED FINANCIAL INFORMATION

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Noninterest Income					
Trust, Investment and Other Servicing Fees	**$ 3,995.0**	$ 3,852.1	$ 3,753.7	**4 %**	3 %
Foreign Exchange Trading Income	**290.4**	250.9	307.2	**16**	(18)
Other Noninterest Income	**372.2**	292.2	276.6	**27**	6
Total Noninterest Income	**4,657.6**	4,395.2	4,337.5	**6**	1
Net Interest Income[(1)]	**1,477.6**	1,710.7	1,663.9	**(14)**	3
Revenue[(1)]	**6,135.2**	6,105.9	6,001.4	**—**	2
Provision for Credit Losses	**125.0**	(14.5)	(14.5)	**N/M**	—
Noninterest Expense	**4,348.2**	4,143.5	4,016.9	**5**	3
Income before Income Taxes[(1)]	**1,662.0**	1,976.9	1,999.0	**(16)**	(1)
Provision for Income Taxes[(1)]	**452.7**	484.7	442.6	**(7)**	10
Net Income	**$ 1,209.3**	$ 1,492.2	$ 1,556.4	**(19)%**	(4)%
Average Assets	**$ 136,811.1**	$ 117,551.4	$ 122,946.6	**16 %**	(4)%

[(1)] Non-GAAP financial measures stated on an FTE basis. The consolidated figures include $34.4 million, $32.8 million, and $41.2 million of FTE adjustments for 2020, 2019, and 2018, respectively. A reconciliation of total consolidated revenue, Net Interest Income and net interest margin on a GAAP basis to revenue, Net Interest Income and net interest margin on an FTE basis, respectively, (each of which is a non-GAAP financial measure) is provided on page 85.

Corporate & Institutional Services

C&IS is a leading global provider of asset servicing and related services to corporate and public retirement funds, foundations, endowments, fund managers, insurance companies, sovereign wealth funds, and other institutional investors around the globe. Asset servicing and related services encompass a full range of capabilities including but not limited to: custody; fund administration; investment operations outsourcing; investment management; investment risk and analytical services; employee benefit services; securities lending; foreign exchange; treasury management; brokerage services; transition management services; banking and cash management. Client relationships are managed through the Bank and the Bank's and the Corporation's other subsidiaries, including support from locations in North America, Europe, the Middle East, and the Asia-Pacific region. The following table summarizes the results of operations of C&IS for the years ended December 31, 2020, 2019, and 2018 on a management-reporting basis.

TABLE 26: C&IS RESULTS OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Noninterest Income					
Trust, Investment and Other Servicing Fees	**$ 2,321.6**	$ 2,211.5	$ 2,173.1	**5 %**	2 %
Foreign Exchange Trading Income	**276.3**	232.2	233.4	**19**	(1)
Other Noninterest Income	**222.5**	178.2	183.0	**25**	(3)
Total Noninterest Income	**2,820.4**	2,621.9	2,589.5	**8**	1
Net Interest Income[(1)]	**665.5**	918.7	992.2	**(28)**	(7)
Revenue[(1)]	**3,485.9**	3,540.6	3,581.7	**(2)**	(1)
Provision for Credit Losses	**38.1**	1.9	1.9	**N/M**	—
Noninterest Expense	**2,752.7**	2,605.5	2,421.4	**6**	8
Income before Income Taxes[(1)]	**695.1**	933.2	1,158.4	**(26)**	(19)
Provision for Income Taxes[(1)]	**174.4**	219.4	255.3	**(21)**	(14)
Net Income	**$ 520.7**	$ 713.8	$ 903.1	**(27)%**	(21)%
Percentage of Consolidated Net Income	**43 %**	48 %	58 %		
Average Assets	**$ 104,790.6**	$ 87,557.1	$ 82,996.5	**20 %**	5 %

[(1)] *Non-GAAP financial measures stated on an FTE basis.*

C&IS Net Income
Net Income decreased in 2020 compared to 2019, primarily due to lower Net Interest Income and higher Noninterest Expense, partially offset by higher Noninterest Income.

C&IS Trust, Investment and Other Servicing Fees
For an explanation of C&IS Trust, Investment, and Other Servicing Fees, please see the "Trust, Investment, and Other Servicing Fees" section within the Consolidated Results of Operations section of the MD&A.

C&IS Foreign Exchange Trading Income
Foreign Exchange Trading Income in 2020 increased from 2019, primarily driven by higher client volumes and increased market volatility.

C&IS Other Noninterest Income
Other Noninterest Income for 2020 increased from 2019, primarily due to Security Commissions and Trading Income and Other Operating Income.

C&IS Net Interest Income
Net Interest Income on an FTE basis decreased in 2020 from 2019, due to a lower net interest margin, partially offset by an increase in average earning assets. Net interest margin on an FTE basis decreased to 0.75% from 1.26%. Average earning assets of $94.6 billion, increased $15.5 billion, or 20%, from $79.1 billion in the prior year. The earning assets in C&IS consisted primarily of intercompany assets and Loans and Leases. Funding sources were primarily comprised of non-U.S. custody-related interest-bearing deposits, which averaged $60.5 billion in 2020, increased from $54.9 billion in 2019.

C&IS Provision for Credit Losses
On January 1, 2020, the Corporation adopted ASU 2016-13. For more information on the adoption, please refer to Note 2, "Recent Accounting Pronouncements," provided in Item 8, "Financial Statements and Supplementary Data." The C&IS Provision for Credit Losses was a provision of $38.1 million for 2020 and $1.9 million for 2019. The 2020 provision reflected an increase in the reserve evaluated on a collective basis driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts on the commercial and institutional portfolio. The 2019 provision reflected an increase to the inherent reserve for outstanding loans due to lower credit quality, partially offset by a decrease to the specific reserve related to standby letters of credit and outstanding loans.

C&IS Noninterest Expense
Total C&IS Noninterest Expense, which includes the direct expense of the reporting segment, indirect expense allocations for product and operating support, and indirect expense allocations for certain corporate support services, increased in 2020 from 2019. The increase primarily reflects higher expense allocations, including a $43.4 million charge related to a corporate action processing error, higher Compensation expense, Employee Benefits, Outside Services, and Equipment and Software expense, partially offset by lower business promotion expense due to reduced business travel and lower staff-related expenses.

Wealth Management

Wealth Management focuses on high-net-worth individuals and families, business owners, executives, professionals, retirees, and established privately-held businesses in its target markets. The business also includes the Global Family Office, which provides customized services to meet the complex financial needs of individuals and family offices in the United States and throughout the world with assets typically exceeding $200 million. In supporting these targeted segments, Wealth Management provides trust, investment management, custody, and philanthropic services; financial consulting; guardianship and estate administration; family business consulting; family financial education; brokerage services; and private and business banking. Wealth Management is one of the largest providers of advisory services in the United States with assets under custody/administration, assets under custody, and assets under management of $879.4 billion, $875.1 billion, and $347.8 billion, respectively, at December 31, 2020. Wealth Management services are delivered by multidisciplinary teams through a network of offices in 19 U.S. states and Washington, D.C., as well as offices in London, Guernsey, and Abu Dhabi.

The following table summarizes the results of operations of Wealth Management for the years ended December 31, 2020, 2019, and 2018 on a management-reporting basis.

TABLE 27: WEALTH MANAGEMENT RESULTS OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Noninterest Income					
Trust, Investment and Other Servicing Fees	**$ 1,673.4**	$ 1,640.6	$ 1,580.6	**2 %**	4 %
Foreign Exchange Trading Income	**14.1**	18.7	4.2	**(25)**	N/M
Other Noninterest Income	**168.0**	131.1	102.7	**28**	28
Total Noninterest Income	**1,855.5**	1,790.4	1,687.5	**4**	6
Net Interest Income[(1)]	**812.1**	792.0	816.5	**3**	(3)
Revenue[(1)]	**2,667.6**	2,582.4	2,504.0	**3**	3
Provision for Credit Losses	**86.9**	(16.4)	(16.4)	**N/M**	—
Noninterest Expense	**1,559.7**	1,531.6	1,460.0	**2**	5
Income before Income Taxes[(1)]	**1,021.0**	1,067.2	1,060.4	**(4)**	1
Provision for Income Taxes[(1)]	**291.8**	271.1	262.1	**8**	3
Net Income	**$ 729.2**	$ 796.1	$ 798.3	**(8)%**	— %
Percentage of Consolidated Net Income	**60 %**	53 %	51 %		
Average Assets	**$ 32,020.5**	$ 29,994.3	$ 26,163.7	**7 %**	15 %

[(1)] *Non-GAAP financial measures stated on an FTE basis.*

Wealth Management Net Income

Wealth Management Net Income decreased in 2020, primarily reflecting a higher Provision for Credit Losses and higher Noninterest Expense, partially offset by higher Revenue.

Wealth Management Trust, Investment and Other Servicing Fees

For an explanation of Wealth Management Trust, Investment, and Other Servicing Fees, please see the "Trust, Investment, and Other Servicing Fees" section within the Consolidated Results of Operations section of the MD&A.

Wealth Management Other Noninterest Income

Other Noninterest Income for 2020 increased from 2019, primarily due to Security Commissions and Trading Income, Other Operating Income, and Treasury Management Fees.

Wealth Management Net Interest Income

Net Interest Income on an FTE basis for 2020 increased from 2019, primarily attributable to a higher net interest allocation from Treasury and Other and an increase in earning assets, partially offset by a decrease in the net interest margin. Net interest margin on an FTE basis decreased to 2.94% from 3.06%. Average earning assets of $29.5 billion in 2020, increased $1.5 billion, or 5%, from $28.0 billion in 2019. Earning assets and funding sources for the year ended December 31, 2020 were primarily comprised of loans and domestic interest-bearing deposits, respectively.

Wealth Management Provision for Credit Losses

On January 1, 2020, the Corporation adopted ASU 2016-13. For more information on the adoption, please refer to Note 2, "Recent Accounting Pronouncements," provided in Item 8, "Financial Statements and Supplementary Data." The Wealth Management Provision for Credit Losses was $86.9 million in 2020 as compared to a credit provision of $16.4 million in 2019. The 2020 provision reflected an increase in the reserve evaluated on a collective basis driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts, primarily impacting the commercial real estate and commercial and institutional portfolios. The 2019 credit provision was primarily driven by a reduction in outstanding loans and improved credit quality in the residential real estate portfolio, which resulted in a reduction of the inherent allowance.

Wealth Management Noninterest Expense

Noninterest Expense, which includes the direct expense of the reporting segment, indirect expense allocations for product and operating support, and indirect expense allocations for certain corporate support services, increased in 2020 from 2019. The increase primarily reflects higher expense allocations and Employee Benefits, partially offset by lower business promotion expense due to reduced business travel.

Treasury and Other

Beginning January 1, 2019, Treasury and Other includes income and expenses associated with non-recurring activities such as certain costs associated with acquisitions, divestitures, litigation, restructuring, and tax adjustments. For reporting periods ended prior to January 1, 2019, income and expense associated with the wholesale funding activities and investment portfolios of the Corporation and the Bank, as well as certain corporate-based expense, executive-level compensation and nonrecurring items, were not allocated to C&IS and Wealth Management, and are reported in Treasury and Other. Treasury and Other information for 2020 and 2019 is not directly comparable to information for 2018 due to the enhanced segment reporting methodology beginning January 1, 2019. Also beginning January 1, 2019, net interest income and average assets are allocated to the C&IS and Wealth Management reporting segments.

The following table summarizes the results of operations of Treasury and Other for the years ended December 31, 2020, 2019, and 2018 on a management-reporting basis.

TABLE 28: TREASURY AND OTHER RESULTS OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31,			CHANGE	
($ In Millions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Noninterest Income	**$ (18.3)**	$ (17.1)	$ 60.5	**N/M**	N/M
Net Interest Income[(1)]	**—**	—	(144.8)	**N/M**	N/M
Revenue[(1)]	**(18.3)**	(17.1)	(84.3)	**N/M**	N/M
Noninterest Expense	**35.8**	6.4	135.5	**N/M**	N/M
Income (Loss) before Income Taxes[(1)]	**(54.1)**	(23.5)	(219.8)	**N/M**	N/M
Provision (Benefit) for Income Taxes[(1)]	**(13.5)**	(5.8)	(74.8)	**N/M**	N/M
Net Income	**$ (40.6)**	$ (17.7)	$ (145.0)	**N/M**	N/M
Percentage of Consolidated Net Income	**(3)%**	(1)%	(9)%		
Average Assets	**$ —**	$ —	$ 13,786.4	**N/M**	N/M

[(1)] *Non-GAAP financial measures stated on an FTE basis.*

Treasury and Other Noninterest Income

Noninterest Income in 2020 decreased from 2019 due to higher expenses for existing swap agreements related to Visa Inc. Class B common shares.

Treasury and Other Noninterest Expense

Noninterest Expense in 2020 increased from 2019, primarily due to costs associated with workplace real estate strategies and higher Compensation expense related to a one-time supplemental payment to employees in response to the COVID-19 pandemic.

Asset Management

Asset Management, through the Corporation's various subsidiaries, supports the C&IS and Wealth Management reporting segments by providing a broad range of asset management and related services and other products to clients around the world. Investment solutions are delivered through separately managed accounts, bank common and collective funds, registered investment companies, exchange traded funds, non-U.S. collective investment funds, and unregistered private investment funds. Asset Management's capabilities include active and passive equity; active and passive fixed income; cash management; multi-asset and alternative asset classes (such as private equity and hedge funds of funds); and multi-manager advisory services and products. Asset Management's activities also include overlay services and other risk management services. Asset Management operates internationally through subsidiaries and distribution arrangements and its revenue and expense are allocated fully to C&IS and Wealth Management.

At December 31, 2020, Northern Trust managed $1.41 trillion in assets for personal and institutional clients, including $1.06 trillion for C&IS clients and $347.8 billion for Wealth Management clients. The following table presents consolidated assets under management as of December 31, 2020, 2019 and 2018 by investment type.

TABLE 29: CONSOLIDATED ASSETS UNDER MANAGEMENT BY INVESTMENT TYPE

	DECEMBER 31,			CHANGE	
($ In Billions)	**2020**	2019	2018	**2020 / 2019**	2019 / 2018
Equities	**$ 733.7**	$ 650.8	$ 534.2	**13 %**	22 %
Fixed Income Securities	**204.8**	193.8	178.3	**6**	9
Cash and Other Assets	**279.9**	223.6	207.0	**25**	8
Securities Lending Collateral	**186.9**	163.1	149.9	**15**	9
Total Assets Under Management	**$ 1,405.3**	$ 1,231.3	$ 1,069.4	**14 %**	15 %

Assets under management increased at year-end 2020 from year-end 2019. The increase primarily reflected favorable markets and net inflows. The following table presents activity in consolidated assets under management by product during the years ended December 31, 2020, 2019 and 2018.

TABLE 30: ACTIVITY IN CONSOLIDATED ASSETS UNDER MANAGEMENT BY PRODUCT

($ In Billions)	**2020**	2019	2018
Balance as of January 1	**$ 1,231.3**	$ 1,069.4	$ 1,161.0
Inflows by Product			
Equities	**193.0**	193.6	174.7
Fixed Income	**65.0**	48.1	63.7
Cash and Other Assets	**802.4**	551.6	484.3
Securities Lending Collateral	**268.8**	260.5	165.6
Total Inflows	**1,329.2**	1,053.8	888.3
Outflows by Product			
Equities	**(212.6)**	(205.5)	(179.2)
Fixed Income	**(68.5)**	(49.7)	(72.5)
Cash and Other Assets	**(746.5)**	(541.0)	(487.4)
Securities Lending Collateral	**(245.0)**	(247.3)	(183.3)
Total Outflows	**(1,272.6)**	(1,043.5)	(922.4)
Net Inflows (Outflows)	**56.6**	10.3	(34.1)
Market Performance, Currency & Other			
Market Performance & Other	**109.1**	151.1	(49.3)
Currency	**8.3**	0.5	(8.2)
Total Market Performance, Currency & Other	**117.4**	151.6	(57.5)
Balance as of December 31	**$ 1,405.3**	$ 1,231.3	$ 1,069.4

CONSOLIDATED BALANCE SHEET REVIEW

The following tables summarize selected consolidated balance sheet information.

TABLE 31: SELECT CONSOLIDATED BALANCE SHEET INFORMATION

($ In Billions)	DECEMBER 31, 2020	DECEMBER 31, 2019	CHANGE	
Assets				
Federal Reserve and Other Central Bank Deposits and Other[(1)]	**$ 55.4**	$ 33.8	$ 21.6	64 %
Interest-Bearing Due from and Deposits with Banks[(2)]	**6.6**	7.0	(0.4)	(5)
Securities Purchased under Agreements to Resell	**1.6**	0.7	0.9	126
Total Securities[(3)]	**61.1**	52.3	8.8	17
Loans and Leases	**33.8**	31.4	2.4	7
Total Earning Assets	**158.5**	125.2	33.3	27
Total Assets	**170.0**	136.8	33.2	24
Liabilities and Stockholders' Equity				
Total Interest-Bearing Deposits	**100.8**	82.8	18.0	22
Demand and Other Noninterest-Bearing Deposits	**43.1**	26.3	16.8	64
Federal Funds Purchased	**0.3**	0.6	(0.3)	(53)
Securities Sold under Agreements to Repurchase	**—**	0.5	(0.5)	(92)
Other Borrowings	**4.0**	6.7	(2.7)	(41)
Total Stockholders' Equity	**11.7**	11.1	0.6	5

(1) Federal Reserve and Other Central Bank Deposits and Other includes collateral deposits with certain securities depositories and clearing houses for the purpose of presenting earning assets; such deposits are presented in Other Assets on the consolidated balance sheets.

(2) Interest-Bearing Due from and Deposits with Banks includes the interest-bearing component of Cash and Due from Banks and Interest-Bearing Deposits with Banks as presented on the consolidated balance sheets.

(3) Total Securities includes certain community development investments and Federal Home Loan Bank and Federal Reserve stock, which are classified in Other Assets on the consolidated balance sheets.

TABLE 32: SELECT AVERAGE CONSOLIDATED BALANCE SHEET INFORMATION

	TWELVE MONTHS ENDED DECEMBER 31,			
($ In Billions)	2020	2019	CHANGE	
Assets				
Federal Reserve and Other Central Bank Deposits and Other[(1)]	**$ 27.9**	$ 18.5	$ 9.4	51 %
Interest-Bearing Due from and Deposits with Banks[(2)]	**5.4**	6.0	(0.6)	(10)
Securities Purchased under Agreements to Resell	**1.2**	0.8	0.4	50
Total Securities[(3)]	**56.1**	50.7	5.4	11
Loans and Leases	**33.5**	31.1	2.4	8
Total Earning Assets	**124.1**	107.1	17.0	16
Total Assets	**136.8**	117.6	19.2	16
Liabilities and Stockholders' Equity				
Total Interest-Bearing Deposits	**85.1**	72.3	12.8	18
Demand and Other Noninterest-Bearing Deposits	**23.4**	17.5	5.9	34
Federal Funds Purchased	**1.0**	1.3	(0.3)	(23)
Securities Sold under Agreements to Repurchase	**0.2**	0.3	(0.1)	(36)
Other Borrowings	**6.4**	7.8	(1.4)	(17)
Total Stockholders' Equity	**11.2**	10.6	0.6	5

(1) Federal Reserve and Other Central Bank Deposits and Other includes collateral deposits with certain securities depositories and clearing houses for the purpose of presenting earning assets; such deposits are presented in Other Assets on the consolidated balance sheets.

(2) Interest-Bearing Due from and Deposits with Banks includes the interest-bearing component of Cash and Due from Banks and Interest-Bearing Deposits with Banks as presented on the consolidated balance sheets.

(3) Total Securities includes certain community development investments and Federal Home Loan Bank and Federal Reserve stock, which are classified in Other Assets on the consolidated balance sheets.

Average balances are considered to be a better measure of balance sheet trends, as period-end balances can be impacted by the timing of deposit and withdrawal activity involving large client balances. The current growth in both the period-end and average consolidated balance sheets was primarily driven by higher customer deposit balances.

Stockholders' Equity. The increase in average Stockholders' Equity was primarily attributable to earnings and Accumulated Other Comprehensive Income since the prior year, partially offset by the repurchase of common stock pursuant to the Corporation’s share repurchase program, the net redemption of preferred stock during the first quarter of 2020, and dividend declarations. During the first quarter of 2020, proceeds from the Series E Non-Cumulative Perpetual Preferred Stock issuance in the fourth quarter of 2019 were used to fund the redemption of all outstanding shares of the Corporation’s Series C Non-Cumulative Perpetual Preferred Stock at a redemption price of $400 million, which was $11.5 million in excess of the net carrying value of the shares. The $11.5 million excess is included in preferred stock dividends in the determination of net income available to common shareholders.

The Corporation suspended its open-market share repurchase program on March 16, 2020. During the year ended December 31, 2020, the Corporation repurchased 3,276,589 shares of common stock, including 532,713 shares withheld related to share-based compensation, at a total cost of $299.8 million ($91.49 average price per share).

Beginning in the second quarter of 2020, the Federal Reserve announced certain measures to ensure that large financial institutions, including Northern Trust, remain resilient despite the economic uncertainty resulting from the ongoing COVID-19 pandemic. Specifically, for the third and fourth quarters of 2020, no share repurchases were permitted by these institutions and dividend payments were limited to the amount paid in the second quarter and could not exceed the payor’s average net income for the four preceding quarters. On December 18, 2020, the Federal Reserve again extended its capital distribution limits into the first quarter of 2021 with certain modifications, which include continuing to limit dividend payments based on recent income and limiting share repurchases based on recent income. During the first quarter of 2021, the Corporation restarted its share repurchase program in accordance with such limitations.

Asset Quality

Securities Portfolio

The following table presents the remaining maturity and average yield of Northern Trust's held to maturity and available for sale debt securities by security type as of December 31, 2020.

TABLE 33: REMAINING MATURITY AND AVERAGE YIELD OF DEBT SECURITIES HELD TO MATURITY AND AVAILABLE FOR SALE

	DECEMBER 31, 2020										
	TOTAL		ONE YEAR OR LESS		ONE TO FIVE YEARS		FIVE TO TEN YEARS		OVER TEN YEARS		
($ in Millions)	BOOK	YIELD	BOOK	YIELD	BOOK	YIELD	BOOK	YIELD	BOOK	YIELD	AVERAGE MATURITY
Debt Securities Held to Maturity											
U.S. Government	$ 90.0	0.06%	$ 90.0	0.06%	$ —	—%	$ —	— %	$ —	—%	2 mo.
Obligations of States and Political Subdivisions	2.1	5.47	1.4	5.37	0.7	5.64	—	—	—	—	6 mos.
Government Sponsored Agency	3.0	4.86	0.5	4.83	1.3	4.85	0.8	4.88	0.4	4.85	60 mos.
Other – Fixed	15,130.6	0.29	11,000.7	0.11	3,572.4	0.76	440.9	0.67	116.6	1.31	13 mos.
– Floating	2,565.4	0.42	501.0	0.27	2,032.8	0.46	31.6	0.41	—	—	40 mos.
Total Debt Securities Held to Maturity	$17,791.1	0.31%	$11,593.6	0.12%	$ 5,607.2	0.65%	$ 473.3	0.66 %	$ 117.0	1.32%	17 mos.
Debt Securities Available for Sale											
U.S. Government	$ 2,799.9	1.66%	$ 303.2	1.86%	$ 1,767.0	1.72%	$ 729.7	1.43 %	$ —	—%	39 mos.
Obligations of States and Political Subdivisions	3,083.6	2.10	8.0	1.66	266.8	2.30	2,718.4	2.09	90.4	1.64	90 mos.
Government Sponsored Agency	24,956.7	1.40	5,613.6	1.48	9,063.0	1.48	7,793.6	1.26	2,486.5	1.39	60 mos.
Asset-Backed – Fixed	3,274.1	2.18	537.4	2.39	2,094.3	1.94	642.4	2.80	—	—	30 mos.
Asset-Backed – Floating	1,755.2	1.41	0.7	1.31	1,284.6	1.47	372.9	1.55	97.0	0.11	87 mos.
Other – Fixed	5,150.8	1.88	821.7	1.29	3,912.8	0.54	416.3	0.56	—	—	32 mos.
– Floating	1,001.7	0.62	314.1	0.64	687.6	0.62	—	—	—	—	19 mos.
Total Debt Securities Available for Sale	$42,022.0	1.57%	$ 7,598.7	1.51%	$19,076.1	1.67%	$12,673.3	1.51 %	$2,673.9	1.35%	55 mos.

Note: Yield is calculated on amortized cost and presented on a taxable equivalent basis giving effect to the applicable federal and state tax rates.

Northern Trust maintains a high quality debt securities portfolio. Debt securities not explicitly rated were grouped where possible under the credit rating of the issuer of the security. The following tables provide the fair value of debt securities available for sale and amortized cost of debt securities held to maturity by credit rating.

TABLE 34: FAIR VALUE OF DEBT SECURITIES AVAILABLE FOR SALE BY CREDIT RATING

	AS OF DECEMBER 31, 2020				
($ In Millions)	AAA	AA	A	NOT RATED	TOTAL
U.S. Government	$ 2,799.9	$ —	$ —	$ —	$ 2,799.9
Obligations of States and Political Subdivisions	918.1	2,165.5	—	—	3,083.6
Government Sponsored Agency	24,956.7	—	—	—	24,956.7
Non-U.S. Government	669.8	38.8	5.4	—	714.0
Corporate Debt	426.3	790.0	1,123.5	199.8	2,539.6
Covered Bonds	453.3	—	24.9	74.9	553.1
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	1,622.0	566.0	157.8	—	2,345.8
Other Asset-Backed	3,947.5	—	—	50.0	3,997.5
Commercial Mortgage-Backed	1,031.8	—	—	—	1,031.8
Total	$ 36,825.4	$ 3,560.3	$ 1,311.6	$ 324.7	$ 42,022.0
Percent of Total	88 %	8 %	3 %	1 %	100 %

The 1% of debt securities available for sale not rated by Moody's Investors Service, Standard and Poor's or Fitch Ratings primarily consisted of corporate debt, covered bonds, and other asset-backed securities.

TABLE 35: AMORTIZED COST OF DEBT SECURITIES HELD TO MATURITY BY CREDIT RATING

	AS OF DECEMBER 31, 2020					
($ In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
U.S. Government	$ 90.0	$ —	$ —	$ —	$ —	$ 90.0
Obligations of States and Political Subdivisions	—	1.0	—	1.1	—	2.1
Government Sponsored Agency	3.0	—	—	—	—	3.0
Non-U.S. Government	319.8	1,337.4	6,630.6	48.8	—	8,336.6
Corporate Debt	3.8	279.1	305.1	—	—	588.0
Covered Bonds	3,184.6	—	—	—	—	3,184.6
Certificates of Deposit	—	—	—	—	807.2	807.2
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	2,590.9	1,057.1	—	—	—	3,648.0
Other Asset-Backed	677.0	—	—	—	—	677.0
Other	—	—	—	—	454.6	454.6
Total	$ 6,869.1	$ 2,674.6	$ 6,935.7	$ 49.9	$ 1,261.8	$ 17,791.1
Percent of Total	39 %	15 %	39 %	— %	7 %	100 %

The 7% of debt securities held to maturity not rated by Moody's Investors Service, Standard and Poor's or Fitch Ratings consisted of certificates of deposit with a remaining life of less than six months as well as investments purchased by Northern Trust to fulfill its obligations under the Community Reinvestment Act (CRA). Northern Trust fulfills its obligations under the CRA by making qualified investments for purposes of supporting institutions and programs that benefit low-to-moderate income communities within Northern Trust's market area.

Net unrealized gains within the investment securities portfolio totaled $872.6 million at December 31, 2020, compared to net unrealized gains of $118.9 million as of December 31, 2019. Net unrealized gains as of December 31, 2020 were comprised of $981.9 million and $109.3 million of gross unrealized gains and losses, respectively.

As of December 31, 2020, the $42.0 billion debt securities available for sale portfolio had unrealized losses of $26.9 million and $2.8 million related to government-sponsored agency and other asset-backed securities, respectively, which are primarily attributable to changes in market interest rates and credit spreads since their purchase.

As of December 31, 2020, the $17.8 billion debt securities held to maturity portfolio had an unrealized loss of $76.5 million related to other residential mortgage-backed securities, which is primarily attributable to changes in overall market interest rates and credit spreads since their purchase.

As of December 31, 2020, 16% of the corporate debt securities available for sale portfolio was backed by guarantees provided by U.S. and non-U.S. government entities.

For additional information relating to the securities portfolio, refer to Note 4, "Securities," provided in Item 8, "Financial Statements and Supplementary Data."

Northern Trust participates in the repurchase agreement market as a relatively low cost alternative for short-term funding. Securities purchased under agreements to resell and securities sold under agreements to repurchase are accounted for as collateralized financings and recorded at the amounts at which the securities were acquired or sold plus accrued interest. To minimize any potential credit risk associated with these transactions, the fair value of the securities purchased or sold is monitored, limits are set on exposure with counterparties, and the financial condition of counterparties is regularly assessed. It is Northern Trust's policy to take possession, either directly or via third-party custodians, of securities purchased under agreements to resell. Securities sold under agreements to repurchase are held by the counterparty until the repurchase.

For additional information relating to the securities sold under agreements to repurchase, refer to Note 5, "Securities Purchased Under Agreements to Resell and Securities Sold Under Agreements to Repurchase," provided in Item 8, "Financial Statements and Supplementary Data."

Loans and Leases

During 2020, the Corporation implemented a change in the classification of certain loans and leases to enhance the consistency of its reporting across various regulatory regimes. As a result, the loan and lease balances as of December 31, 2019 below have been adjusted to conform to the revised presentation. The 2020 adjustments generally reflect reclassification of loans from the commercial real estate class to commercial and institutional, residential real estate, and private client classes. There was no impact on total Loans and Leases previously reported.

For additional information relating to the loan and leases portfolio, refer to Note 6, "Loans and Leases," and Note 8 "Concentrations of Credit Risk" provided in Item 8, "Financial Statements and Supplementary Data."

The following table presents the remaining maturity of loans and leases by segment and class as of December 31, 2020.

TABLE 36: REMAINING MATURITY OF LOANS AND LEASES

	DECEMBER 31, 2020				
(In Millions)	TOTAL	ONE YEAR OR LESS	ONE TO FIVE YEARS	FIVE TO FIFTEEN YEARS	OVER FIFTEEN YEARS
U.S.:					
Commercial					
Commercial and Institutional	$ **10,058.3**	$ **3,850.3**	$ **5,635.0**	$ **566.3**	$ **6.7**
Commercial Real Estate	**3,558.4**	**470.3**	**2,314.4**	**769.1**	**4.6**
Lease Financing, net	**11.4**	—	—	**11.4**	—
Other	**288.2**	**288.2**	—	—	—
Personal					
Private Client	**11,815.1**	**7,978.6**	**3,499.3**	**335.3**	**1.9**
Residential Real Estate	**6,035.7**	**125.6**	**324.4**	**910.3**	**4,675.4**
Other	**49.0**	**49.0**	—	—	—
Total U.S.	$ **31,816.1**	$ **12,762.0**	$ **11,773.1**	$ **2,592.4**	$ **4,688.6**
Non-U.S.:					
Non-U.S. - Commercial	$ **1,345.7**	$ **1,203.4**	$ **142.3**	$ —	$ —
Non-U.S. - Personal	**597.9**	**469.5**	**82.7**	**31.8**	**13.9**
Total Non-U.S.	$ **1,943.6**	$ **1,672.9**	$ **225.0**	$ **31.8**	$ **13.9**
Total Loans and Leases	$ **33,759.7**	$ **14,434.9**	$ **11,998.1**	$ **2,624.2**	$ **4,702.5**

Note: Non-U.S. loans primarily include short duration exposures related to custodied client investments.

TABLE 37: INTEREST RATE SENSITIVITY OF LOANS AND LEASES

	DECEMBER 31, 2020				
(In Millions)	TOTAL	ONE YEAR OR LESS	ONE TO FIVE YEARS	FIVE TO FIFTEEN YEARS	OVER FIFTEEN YEARS
Fixed Rate:					
Commercial					
Commercial and Institutional	$ 548.7	$ 97.6	$ 392.6	$ 57.1	$ 1.4
Commercial Real Estate	190.5	28.0	108.0	54.5	—
Total Commercial	$ 739.2	$ 125.6	$ 500.6	$ 111.6	$ 1.4
Personal					
Private Client	$ 423.9	$ 88.9	$ 239.3	$ 94.8	$ 0.9
Residential Real Estate	920.5	3.7	39.8	570.0	307.0
Total Personal	$ 1,344.4	$ 92.6	$ 279.1	$ 664.8	$ 307.9
Total Fixed Rate	$ 2,083.6	$ 218.2	$ 779.7	$ 776.4	$ 309.3
Variable Rate:					
Commercial					
Commercial and Institutional	$ 9,509.6	$ 3,752.7	$ 5,242.4	$ 509.2	$ 5.3
Commercial Real Estate	3,367.9	442.3	2,206.4	714.6	4.6
Non-U.S.	1,345.7	1,203.4	142.3	—	—
Lease Financing, net	11.4	—	—	11.4	—
Other	288.2	288.2	—	—	—
Total Commercial	$ 14,522.8	$ 5,686.6	$ 7,591.1	$ 1,235.2	$ 9.9
Personal					
Private Client	$ 11,391.2	$ 7,889.7	$ 3,260.0	$ 240.5	$ 1.0
Residential Real Estate	5,115.2	121.9	284.6	340.3	4,368.4
Non-U.S.	597.9	469.5	82.7	31.8	13.9
Other	49.0	49.0	—	—	—
Total Personal	$ 17,153.3	$ 8,530.1	$ 3,627.3	$ 612.6	$ 4,383.3
Total Variable Rate	$ 31,676.1	$ 14,216.7	$ 11,218.4	$ 1,847.8	$ 4,393.2
Total Loans and Leases	$ 33,759.7	$ 14,434.9	$ 11,998.1	$ 2,624.2	$ 4,702.5

Nonaccrual Assets and 90 Days Past Due Loans

During 2020, the Corporation implemented changes in the classification of certain loans and leases to enhance the consistency of its reporting across various regulatory regimes. As a result, the loan and lease balances as of December 31, 2019 below have been adjusted to conform to the revised presentation. The 2020 adjustments generally reflect reclassification of loans from the commercial real estate class to commercial and institutional, residential real estate, and private client classes.

Nonaccrual assets consist of nonaccrual loans and leases and other real estate owned (OREO). OREO is comprised of commercial and residential properties acquired in partial or total satisfaction of loans. Loans that are delinquent 90 days or more and still accruing interest can fluctuate widely at any reporting period based on the timing of cash collections, renegotiations and renewals. For additional information relating to nonaccrual loans, refer to Note 6, "Loans and Leases," provided in Item 8, "Financial Statements and Supplementary Data."

The following table presents nonaccrual assets and loans that were delinquent 90 days or more and still accruing interest at December 31, 2020 and 2019.

TABLE 38: NONACCRUAL ASSETS

($ In Millions)	DECEMBER 31, 2020	2019
Nonaccrual Loans and Leases		
Commercial		
Commercial and Institutional	**$ 26.4**	$ 7.6
Commercial Real Estate	**40.2**	3.6
Total Commercial	**$ 66.6**	$ 11.2
Personal		
Residential Real Estate	**$ 62.2**	$ 71.4
Private Client	**2.9**	0.5
Non-U.S.	**—**	0.5
Total Personal	**$ 65.1**	$ 72.4
Total Nonaccrual Loans and Leases	**131.7**	83.6
Other Real Estate Owned	**0.7**	3.2
Total Nonaccrual Assets	**$ 132.4**	$ 86.8
90 Day Past Due Loans Still Accruing	**$ 8.9**	$ 7.4
Nonaccrual Loans and Leases to Total Loans and Leases	**0.39 %**	0.27 %
Allowance for Credit Losses Assigned to Loans and Leases to Nonaccrual Loans and Leases	**1.4x**	1.3x

Nonaccrual assets as of December 31, 2020 increased from December 31, 2019, primarily relating to net increases in the commercial real estate portfolio due to three new nonaccrual loans and the commercial and institutional portfolio primarily due to a new nonaccrual loan, partially offset by a net decrease in the residential real estate portfolio due to net payoffs and charge-offs. In addition to the negative impact on net interest income and the risk of credit losses, nonaccrual assets also increase operating costs due to the expense associated with collection efforts. Changes in the level of nonaccrual assets may be indicative of changes in the credit quality of one or more loan classes. Changes in credit quality impact the allowance for credit losses through the resultant adjustment of the allowance evaluated on an individual basis and the quantitative and qualitative factors used in the determination of the allowance evaluated on a collective basis within the allowance for credit losses.

Allowance for Credit Losses

During 2020, the Corporation implemented changes in the classification of certain loans and leases to specific segments to enhance the consistency of its reporting across various regulatory regimes. The allowance for credit losses as of and prior to December 31, 2019 remains unadjusted for these adjustments, as the impact of the reclassification on the allowance was immaterial.

The Corporation adopted ASU No. 2016-13 on January 1, 2020, which significantly changed the way impairment of financial instruments is recognized by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of financial instruments. For more information on the adoption of ASU 2016-13, please refer to Note 2, "Recent Accounting Pronouncements," provided in Item 8, "Financial Statements and Supplementary Data."

The allowance for credit losses — which represents management's best estimate of lifetime expected credit losses related to various portfolios subject to credit risk, off-balance sheet credit exposure, and specific borrower relationships — is determined by management through a disciplined credit review process. Northern Trust measures expected credit losses of financial assets with similar risk characteristics on a collective basis. A financial asset is measured individually if it does not share similar risk characteristics with other financial assets and the related allowance is determined through an individual evaluation. Management's estimates utilized in establishing an appropriate level of allowance for credit losses are not dependent on any single assumption. In determining an appropriate allowance level, management evaluates numerous variables, many of which are interrelated or dependent on other assumptions and estimates, and takes into consideration past events, current conditions and reasonable and supportable forecasts. The results of the credit reserve estimation methodology are reviewed quarterly by Northern Trust's Credit Loss Reserve Committee, which receives input from Credit Risk Management, Treasury, Corporate Finance, the Economic Research group, and each of Northern Trust's business units. The allowance for credit losses related to loans and leases, undrawn loan commitments and standby letters of credit, debt securities held to maturity, and other financial assets, was $190.7 million, $61.1 million, $7.3 million, and $0.8 million, respectively as of December 31, 2020. For additional information relating to the allowance for credit losses and the changes in the allowance for credit losses during the years ended December 31, 2020 and 2019 due to charge-offs, recoveries and provisions for credit losses, refer to Note 7, "Allowance for Credit Losses," provided in Item 8, "Financial Statements and Supplementary Data."

The following table shows the net recoveries (charge-offs) to average loans and leases by segment and class at December 31, 2020, 2019, and 2018.

TABLE 39: NET RECOVERIES (CHARGE-OFFS) TO AVERAGE LOANS AND LEASES

($ in Millions)	**2020**	2019	2018
Net Recoveries (Charge-Offs) to Average Loans and Leases			
Commercial			
Commercial and Institutional	**0.02 %**	(0.03)%	0.02 %
Commercial Real Estate	**(0.18)**	0.02	(0.02)
Total Commercial	**(0.03)**	(0.02)	0.01
Personal			
Private Client	**—**	—	(0.01)
Residential Real Estate	**0.02**	0.04	(0.01)
Total Personal	**—**	0.02	(0.01)
Total Net Recoveries (Charge-Offs) to Average Loans and Leases	**(0.01)%**	— %	— %
Net Recoveries (Charge-Offs)			
Commercial			
Commercial and Institutional	**$ 1.8**	$ (2.6)	$ 1.4
Commercial Real Estate	**(5.7)**	0.5	(0.6)
Total Commercial	**(3.9)**	(2.1)	0.8
Personal			
Private Client	**(0.5)**	0.3	(1.3)
Residential Real Estate	**1.2**	2.5	(0.6)
Total Personal	**0.7**	2.8	(1.9)
Total Net Recoveries (Charge-Offs)	**$ (3.2)**	$ 0.7	$ (1.1)
Average Loans and Leases			
Commercial			
Commercial and Institutional	**$ 10,347.1**	$ 8,979.9	$ 9,047.2
Commercial Real Estate	**3,253.8**	2,918.1	3,072.8
Total Select Commercial	**13,600.9**	11,898.0	12,120.0
Personal			
Private Client	**11,452.9**	10,746.0	10,413.3
Residential Real Estate	**6,116.4**	6,297.2	7,034.4
Total Select Personal	**17,569.3**	17,043.2	17,447.7
Total Select Average Loans and Leases	**$ 31,170.2**	$ 28,941.2	$ 29,567.7

Net recoveries (charge-offs) for the following segments were zero and therefore excluded from the above table as the ratio of net recoveries (charge-offs) to average loans and leases is also zero: Lease Financing, net, Other, and Non-U.S. The average loans and leases balances were also not provided in the table for Lease Financing, net, Other, and Non-U.S.

Total average loans and leases for all loan portfolio categories were $33.5 billion, $31.1 billion, and $32.0 billion for the years ended December 31, 2020, 2019, and 2018, respectively.

The SEC requires the disclosure of the Allowance for Credit Losses that is applicable to international operations. The disclosure has been prepared in compliance with this disclosure requirement and is used in determining non-U.S. operating performance. The amounts disclosed should not be construed as being the only amounts that are available for non-U.S. loan charge-offs, since the entire Allowance for Credit Losses assigned to Loans and Leases is available to absorb losses on both U.S. and non-U.S. loans. In addition, these amounts are not intended to be indicative of future charge-off trends. Please refer to the following table for the non-U.S. allowance balances.

The following table shows the allowance evaluated on an individual and collective basis for the loans and leases portfolio by segment and class at December 31, 2020 and 2019.

TABLE 40: ALLOCATION OF THE ALLOWANCE FOR CREDIT LOSSES

	DECEMBER 31,			
	2020		2019	
($ In Millions)	**ALLOWANCE AMOUNT**	**PERCENT OF LOANS TO TOTAL LOANS**	ALLOWANCE AMOUNT	PERCENT OF LOANS TO TOTAL LOANS
Evaluated on an Individual Basis	**$ 10.7**	**— %**	$ 6.9	— %
Evaluated on a Collective Basis				
Commercial				
Commercial and Institutional	**100.6**	**30**	35.3	29
Commercial Real Estate	**70.7**	**10**	33.0	10
Lease Financing, net	**0.4**	**—**	0.1	—
Non-U.S.	**17.7**	**4**	—	5
Other	**—**	**1**	0.2	1
Total Commercial	**189.4**	**45**	68.6	45
Personal				
Residential Real Estate	**28.9**	**18**	27.0	19
Private Client	**20.6**	**35**	20.5	35
Non-U.S.	**2.2**	**2**	—	1
Other	**—**	**—**	1.4	—
Total Personal	**51.7**	**55**	48.9	55
Total Allowance Evaluated on a Collective Basis	**$ 241.1**	**100 %**	$ 117.5	100 %
Total Allowance for Credit Losses	**$ 251.8**	**100 %**	$ 124.4	100 %
Allowance Assigned to:				
Loans and Leases	**$ 190.7**		$ 104.5	
Undrawn Commitments and Standby Letters of Credit	**61.1**		19.9	
Total Allowance for Credit Losses	**$ 251.8**		$ 124.4	
Allowance Assigned to Loans and Leases to Total Loans and Leases	**0.56 %**		0.33 %	

Allowance Related to Credit Exposure Evaluated on an Individual Basis: The allowance is determined through an individual evaluation of loans, leases, and lending-related commitments considered impaired that is based on expected future cash flows, the value of collateral, and other factors that may impact the borrower's ability to pay.

The allowance evaluated on an individual basis for Loans and Leases increased $3.8 million from $6.9 million at December 31, 2019 to $10.7 million at December 31, 2020, primarily attributable to outstanding loans in the commercial and institutional portfolio, partially offset by a decrease in outstanding loans in the residential real estate portfolio.

Allowance Related to Credit Exposure Evaluated on a Collective Basis: Expected credit losses are measured on a collective basis as long as the financial assets included in the respective pool share similar risk characteristics. If financial assets are deemed to not share similar risk characteristics, an individual assessment is warranted.

The allowance evaluated on a collective basis for Loans and Leases increased $123.6 million to $241.1 million at December 31, 2020, compared with $117.5 million at December 31, 2019 under the previous "incurred loss" model, primarily driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts. The largest increases were in the commercial and institutional and commercial real estate portfolios.

Overall Allowance: The evaluation of the reserve evaluated on an individual and collective basis resulted in a total allowance for credit losses of $259.9 million at December 31, 2020, compared with $124.4 million at the end of 2019 under the previous "incurred loss" model. The allowance of $190.7 million assigned to Loans and Leases, as a percentage of total Loans and Leases, was 0.56% at December 31, 2020, which increased from a $104.5 million allowance assigned to Loans and Leases, representing 0.33% of total Loans and Leases at December 31, 2019. Allowances assigned to undrawn loan commitments and standby letters of credit totaled $61.1 million and $19.9 million at December 31, 2020 and 2019, respectively, and are included in Other Liabilities on the consolidated balance sheets.

Capital Expenditures

Capital expenditures in 2020 included continued investments to enhance Northern Trust's software and hardware capabilities, the opening of new offices, and the renovation of several existing offices. Capital expenditures for 2020 totaled $560.4 million, of which $424.6 million was for software, $66.6 million was for building and leasehold improvements, $65.4 million was for computer hardware, and $3.8 million was for furnishings. These capital expenditures principally support, enhance, and protect Northern Trust's investment management, asset servicing and asset management systems and capabilities, and deliver innovative solutions to better serve our clients. Additional capital expenditures committed for technology systems will result in future expense for the depreciation of hardware and amortization of software. Software amortization and depreciation on computer hardware and machinery are charged to Equipment and Software expense. Depreciation on building and leasehold improvements and on furnishings is charged to Occupancy expense and equipment expense, respectively. Capital expenditures for 2019 totaled $599.8 million, of which $441.8 million was for software, $77.7 million was for building and leasehold improvements, $73.7 million was for computer hardware, and $6.6 million was for furnishings.

Deposits

The following table provides the scheduled maturity of total time deposits in denominations of $250,000 or greater at December 31, 2020. For additional information, refer to Note 12, "Deposits," provided in Item 8, "Financial Statements and Supplementary Data."

TABLE 41: REMAINING MATURITY OF TIME DEPOSITS $250,000 OR MORE

	DECEMBER 31, 2020		
	U.S. OFFICE	NON-U.S. OFFICES	
(In Millions)	CERTIFICATES OF DEPOSIT	OTHER TIME	TOTAL
3 Months or Less	$ **266.1**	$ **205.4**	$ **471.5**
Over 3 Months through 6 Months	**83.6**	**—**	**83.6**
Over 6 Months through 12 Months	**310.5**	**—**	**310.5**
Over 12 Months	**41.2**	**—**	**41.2**
Total	$ **701.4**	$ **205.4**	$ **906.8**

Deposits not insured by the FDIC as of December 31, 2020 and 2019 totaled $135.5 billion and $100.9 billion, respectively. These deposit amounts are derived by adding estimated domestic office uninsured deposits as allowed by Federal Financial Institutions Examination Council instructions to all foreign office deposits. Estimated uninsured domestic office deposits are determined by calculating and totaling the deposits in excess of the deposit insurance limit on an individual account basis.

Short-Term Borrowings

For additional information relating to short-term borrowings, refer to Note 5, "Securities Purchased Under Agreements to Resell and Securities Sold Under Agreements to Repurchase," provided in Item 8, "Financial Statements and Supplementary Data."

Geographic Area Information

Northern Trust's non-U.S. activities are primarily related to its asset servicing, asset management, foreign exchange, cash management, and commercial banking businesses. The operations of Northern Trust are managed on a reporting segment basis and include components of both U.S and non-U.S. source assets. Non-U.S. source assets are not separately identified in Northern Trust's internal management reporting system. However, Northern Trust is required to disclose non-U.S. activities based on the domicile of the customer. Due to the complex and integrated nature of Northern Trust's activities, it is difficult to segregate with precision assets between U.S. and non-U.S.-domiciled customers. Therefore, certain subjective estimates and assumptions have been made to allocate assets between U.S. and non-U.S. operations.

The following tables present selected average assets and liabilities attributable to non-U.S. operations (based on the obligor's domicile) and the percent of those balances to total consolidated average assets. For additional information refer to Note 32, "Reporting Segments and Related Information," provided in Item 8, "Financial Statements and Supplementary Data."

TABLE 42: SELECTED AVERAGE ASSETS AND LIABILITIES ATTRIBUTABLE TO NON-U.S. OPERATIONS

($ In Millions)	2020	2019
Total Assets	$ 26,908.5	$ 27,240.7
Time Deposits with Banks	3,258.5	3,896.5
Loans	1,742.5	1,721.1
Non-U.S. Investments	16,018.5	15,420.6
Total Liabilities	70,001.5	62,110.3
Deposits	68,828.9	60,419.7

Non-U.S. Outstandings

As used in this discussion, non-U.S. outstandings are cross-border outstandings as defined by the SEC. They consist of loans, securities, interest-bearing deposits with financial institutions, accrued interest and other monetary assets. Not included are letters of credit, loan commitments, and non-U.S. office local currency claims on residents. Non-U.S. outstandings related to a country are net of guarantees given by third parties resident outside the country and the value of tangible, liquid collateral realizable outside the country. However, transactions with branches of non-U.S. banks are included in these outstandings and are classified according to the country location of the non-U.S. bank's head office.

Short-term interbank time deposits with non-U.S. banks represent the largest category of non-U.S. outstandings. Northern Trust actively participates in the interbank market with U.S. and non-U.S. banks.

Northern Trust places deposits with non-U.S. counterparties that have strong internal (Northern Trust) risk ratings and external credit ratings. These non-U.S. banks are approved and monitored by Northern Trust's Capital Markets Credit Committee, which has credit authority for exposure to all non-U.S. banks and approves credit limits. This process includes financial analysis of the non-U.S. banks, use of an internal risk rating system and consideration of external market indicators. Each counterparty is reviewed at least annually and potentially more frequently based on credit fundamentals or general market conditions. Separate from the entity-specific review process, the average life to maturity of deposits with non-U.S. banks is deliberately maintained on a short-term basis in order to respond quickly to changing credit conditions. Northern Trust also utilizes certain risk mitigation tools and agreements that may reduce exposures through use of collateral and/or balance sheet netting. Additionally, the Capital Markets Credit Committee oversees country-risk analyses and imposes limits on country exposure. For additional information refer to Note 32, "Reporting Segments and Related Information," provided in Item 8, "Financial Statements and Supplementary Data."

STATEMENTS OF CASH FLOWS

The following discusses the statement of cash flow activities for the years ended December 31, 2020, 2019, and 2018.

TABLE 43: CASH FLOW ACTIVITY SUMMARY

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	2020	2019	2018
Net cash provided by (used in):			
Operating activities	$ 1,896.8	$ 2,592.0	$ 1,767.5
Investing activities	(29,923.0)	(3,405.0)	4,327.1
Financing activities	27,871.9	615.9	(5,818.2)
Effect of Foreign Currency Exchange Rates on Cash	84.6	74.7	(212.9)
Change in Cash and Due from Banks	$ (69.7)	$ (122.4)	$ 63.5

Operating Activities

Net cash provided by operating activities of $1.9 billion for the year ended December 31, 2020 was primarily attributable to period earnings and the impact of higher non-cash charges such as depreciation and amortization and provision for credit losses.

For the year ended December 31, 2019, net cash provided by operating activities of $2.6 billion was primarily reflecting period earnings and lower net collateral deposited with derivative counterparties.

Investing Activities

Net cash used in investing activities of $29.9 billion for the year ended December 31, 2020 was primarily attributable to higher levels of deposits with the Federal Reserve and other central banks, net purchases of debt securities held to maturity, higher levels of loans and leases, and net purchases of debt securities available for sale.

For the year ended December 31, 2019, net cash used in investing activities of $3.4 billion was primarily reflecting higher levels of deposits with the Federal Reserve and other central banks, net purchases of debt securities available for sale, and the purchase of bank-owned life insurance policies, partially offset by the net proceeds from the maturity and redemption of debt securities held to maturity and lower levels of loans and leases.

Financing Activities

Net cash provided by financing activities of $27.9 billion for the year ended December 31, 2020 was primarily attributable to higher levels of total deposits and proceeds from the issuance by the Corporation of 1.95% senior notes, partially offset by lower short-term other borrowings, dividends paid on common stock, repayment of the 3.45% senior notes previously issued by the Corporation that matured in November 2020, lower securities sold under agreements to repurchase, and the redemption of the Series C Non-Cumulative Perpetual Preferred Stock. The increase in total deposits was primarily attributable to higher levels of non-U.S. office noninterest-bearing deposits, non-U.S. interest-bearing deposits, savings, money market and other interest-bearing deposits, and demand and other noninterest-bearing deposits.

For the year ended December 31, 2019, net cash provided by financing activities of $0.6 billion was primarily reflecting higher levels of total deposits, proceeds from the issuance by the Corporation of 3.15% senior notes, and proceeds from the Series E Non-Cumulative Perpetual Preferred Stock issuance, partially offset by lower federal funds purchased, lower short-term other borrowings, and the repurchase of common stock pursuant to the Corporation's share repurchase program. The increase in total deposits was primarily attributable to higher levels of savings, money market and other interest-bearing deposits and non-U.S. office noninterest-bearing deposits, partially offset by lower levels of non-U.S. office interest-bearing deposits.

CAPITAL MANAGEMENT

One of Northern Trust's primary objectives is to maintain a strong capital position to merit the confidence of clients, counterparties, creditors, regulators and stockholders. A strong capital position helps Northern Trust execute its strategies and withstand unforeseen adverse developments.

Senior management, with oversight from the Capital Governance Committee and the full Board of Directors, is responsible for capital management and planning. Northern Trust manages its capital on both a total Corporation basis and a legal entity basis. The Capital Committee is responsible for measuring and managing capital metrics against levels set forth within the Capital Policy approved by the Capital Governance Committee of the Board of Directors. In establishing the metrics related to capital, a variety of factors are taken into consideration, including the unique risk profiles of Northern Trust's businesses, regulatory requirements, capital levels relative to peers, and the impact on credit ratings.

Capital levels strengthened in 2020 as average stockholders' equity increased $544.2 million, or 5%, reaching $11.2 billion. Total stockholders' equity was $11.7 billion at December 31, 2020, as compared to $11.1 billion at December 31, 2019. During 2019, the Corporation issued and sold 16 million depositary shares, each representing 1/1,000th ownership interest in a share of Series E Non-Cumulative Perpetual Preferred Stock for proceeds of $391.4 million, net of underwriting discounts, commissions, and other issuance costs. These proceeds were subsequently used to fund the redemption of all outstanding shares of the Corporation's Series C Non-Cumulative Perpetual Preferred Stock on January 2, 2020 at a redemption price of $400.0 million, which was $11.5 million in excess of the net carrying value of the shares. The $11.5 million excess is included in preferred stock dividends in the determination of net income available to common shareholders. Preferred dividends totaling $44.7 million were declared in 2020. During 2020, the Corporation maintained its quarterly common stock dividend of $0.70 per common share. Common dividends totaling $592.0 million were declared in 2020. During the year ended December 31, 2020, the Corporation repurchased 3.3 million shares of common stock, including 0.5 million shares withheld related to share-based compensation, at an average price per share of $91.49.

In accordance with Basel III requirements, capital ratios are calculated using both the standardized and advanced approaches. For each ratio, the lower of the result calculated under the standardized approach and the advanced approach serves as the effective ratio for purposes of determining capital adequacy. The following table provides a reconciliation of the Corporation's common stockholders' equity to total risk-based capital and its risk-based capital ratios, under the applicable U.S. regulatory rules as of December 31, 2020 and 2019.

TABLE 44: CAPITAL ADEQUACY

($ In Millions)	DECEMBER 31, 2020		DECEMBER 31, 2019	
	STANDARDIZED APPROACH	ADVANCED APPROACH	STANDARDIZED APPROACH	ADVANCED APPROACH
Common Equity Tier 1 Capital				
Common Stockholders' Equity	**$ 10,803.4**	**$ 10,803.4**	$ 9,817.5	$ 9,817.5
Goodwill and Other Intangible Assets, net of Deferred Tax Liability	**(775.7)**	**(775.7)**	(776.1)	(776.1)
Other	**(65.5)**	**(65.5)**	(142.7)	(142.7)
Total Common Equity Tier 1 Capital	**9,962.2**	**9,962.2**	8,898.7	8,898.7
Additional Tier 1 Capital				
Preferred Stock	**884.9**	**884.9**	1,273.4	1,273.4
Other	**(24.9)**	**(24.9)**	(20.1)	(20.1)
Total Additional Tier 1 Capital	**860.0**	**860.0**	1,253.3	1,253.3
Total Tier 1 Capital	**10,822.2**	**10,822.2**	10,152.0	10,152.0
Tier 2 Capital				
Qualifying Allowance for Credit Losses	**259.9**	**—**	124.4	—
Qualifying Subordinated Debt	**949.7**	**949.7**	1,099.5	1,099.5
Floating Rate Capital	**53.9**	**53.9**	80.8	80.8
Total Tier 2 Capital	**1,263.5**	**1,003.6**	1,304.7	1,180.3
Total Risk-Based Capital	**$ 12,085.7**	**$ 11,825.8**	$ 11,456.7	$ 11,332.3
Risk-Weighted Assets(1)	**$ 77,662.5**	**$ 74,460.4**	$ 70,088.3	$ 67,526.9
Total Assets – End of Period (EOP)	**170,003.9**	**170,003.9**	136,828.4	136,828.4
Adjusted Average Fourth Quarter Assets(2)	**142,457.6**	**142,457.6**	117,165.7	117,165.7
Total Loans and Leases – EOP	**33,759.7**	**33,759.7**	31,409.6	31,409.6
Common Stockholders' Equity to:				
Total Loans and Leases – EOP	**32.00 %**	**32.00 %**	31.26 %	31.26 %
Total Assets – EOP	**6.35**	**6.35**	7.18	7.18
Risk-Based Capital Ratios				
Common Equity Tier 1 Capital	**12.8 %**	**13.4 %**	12.7 %	13.2 %
Tier 1 Capital	**13.9**	**14.5**	14.5	15.0
Total Capital (Tier 1 and Tier 2)	**15.6**	**15.9**	16.3	16.8
Tier 1 Leverage	**7.6**	**7.6**	8.7	8.7
Supplementary Leverage(3)	**N/A**	**8.6**	N/A	7.6

(1) Risk-weighted assets exclude, as applicable under each regulatory approach, amounts primarily related to goodwill, certain other intangible assets, and net unrealized gains or losses on securities and reflect adjustments for excess allowances for credit losses that have been excluded from Tier 1 and Tier 2 capital, if any.
(2) Adjusted average fourth quarter assets exclude amounts primarily related to goodwill, other intangible assets, and net unrealized gains or losses on securities.
(3) In November 2019, the Federal Reserve and other U.S. federal banking agencies adopted a final rule that established a deduction for central bank deposits from the total leverage exposures of custodial banking organizations, including Northern Trust Corporation and The Northern Trust Company, equal to the lesser of (i) the total amount of funds the custodial banking organization and its consolidated subsidiaries have on deposit at qualifying central banks and (ii) the total amount of client funds on deposit at the custodial banking organization that are linked to fiduciary or custodial and safekeeping accounts. The rule became effective on April 1, 2020.

Further, on April 1, 2020, the Federal Reserve issued an interim final rule that requires bank holding companies, including Northern Trust Corporation, to deduct, on a temporary basis, deposits with the Federal Reserve and investments in U.S. Treasury securities from their total leverage exposure. The U.S. Treasury securities deduction is applied in addition to the central bank deposits relief referred to above. This rule became effective on April 1, 2020 and will remain in effect through the first quarter of 2021. On May 15, 2020, the U.S. federal banking agencies released an interim final rule that permits insured depository institutions of bank holding companies also to temporarily exclude deposits with the Federal Reserve and investments in U.S. Treasury securities from their total leverage exposure. The Northern Trust Company did not elect to take this deduction.

The supplementary leverage ratios at December 31, 2020 for the Northern Trust Corporation and The Northern Trust Company reflect the impact of these final rules.

As of December 31, 2020 and 2019, the Corporation's capital ratios exceeded the requirements for classification as "well-capitalized" under applicable U.S. regulatory requirements. As a result of the stress test results published by the Federal Reserve on June 25, 2020, Northern Trust's stress capital buffer requirement for the 2020 Capital Plan cycle was set at 2.5%. The 2020 stress capital buffer became effective October 1, 2020, and results in a common equity tier 1 capital ratio minimum requirement of 7.0%.

Further information regarding the Corporation's and the Bank's capital ratios and the minimum requirements for classification as "well-capitalized" is provided in the "Supervision and Regulation" section of Item 1, "Business," and Note 33, "Regulatory Capital Requirements," provided in Item 8, "Financial Statements and Supplementary Data."

As of December 31, 2020, the Basel III regulatory capital items subject to phase-in and phase-out are not material to regulatory capital ratios.

OFF-BALANCE SHEET ARRANGEMENTS

Commitments, Letters of Credit, and Securities Lent with Indemnification

Northern Trust, in the normal course of business, enters into various types of commitments and issues letters of credit to meet the liquidity and credit enhancement needs of its clients. The contractual amounts of these instruments represent the potential credit exposure should the instrument be drawn fully upon and the client default. To control the credit risk associated with entering into commitments and issuing letters of credit, Northern Trust subjects such activities to the same credit quality and monitoring controls as its lending activities.

At December 31, 2020, legally binding commitments to extend credit and standby letters of credit to commercial real estate borrowers totaled $252.3 million and $4.5 million, respectively. At December 31, 2019, legally binding commitments to extend credit and standby letters of credit to commercial real estate borrowers totaled $301.6 million and $9.2 million, respectively.

Additional information about Northern Trust's off-balance sheet financial instruments is included in Note 26, "Commitments and Contingent Liabilities," provided in Item 8, "Financial Statements and Supplementary Data."

Variable Interest Entities

Variable Interest Entities (VIEs) are defined within GAAP as entities which either (1) lack sufficient equity at risk to permit the entity to finance its activities without additional subordinated financial support, (2) have equity investors that lack attributes typical of an equity investor, such as the ability to make significant decisions through voting rights affecting the entity's operations, or the obligation to absorb expected losses or the right to receive residual returns of the entity, or (3) are structured with voting rights that are disproportionate to the equity investor's obligation to absorb losses or right to receive returns, and substantially all of the activities are conducted on behalf of the holder of the equity investment at risk with disproportionately few voting rights. Investors that finance a VIE through debt or equity interests are variable interest holders in the entity and the variable interest holder, if any, that has both the power to direct the activities that most significantly impact the entity's economic performance and, through its variable interest, the obligation to absorb losses or the right to receive returns that could potentially be significant to the entity is deemed to be the VIE's primary beneficiary and is required to consolidate the VIE.

Additional information about Northern Trust's VIEs is included in Note 29, "Variable Interest Entities," provided in Item 8, "Financial Statements and Supplementary Data."

CRITICAL ACCOUNTING ESTIMATES

Our significant accounting policies are described in Note 1, "Summary of Significant Accounting Policies," provided in Item 8, "Financial Statements and Supplementary Data." The use of estimates and assumptions is required in the preparation of financial statements in conformity with GAAP and actual results could differ from those estimates. The SEC has issued guidance relating to the disclosure of critical accounting estimates. Critical accounting estimates are those that require management to make subjective or complex judgments about the effect of matters that are inherently uncertain and may change in subsequent periods. Changes that may be required in the underlying assumptions or estimates in these areas could have a material impact on Northern Trust's future financial condition and results of operations.

For Northern Trust, accounting estimates that are viewed as critical are those relating to the allowance for credit losses and pension plan accounting. Management has discussed the development and selection of each critical accounting estimate with the Audit Committee of the Board of Directors (Audit Committee).

Allowance for Credit Losses

The Corporation adopted Accounting Standards Update (ASU) No. 2016-13, "Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments" (ASU 2016-13) on January 1, 2020, which significantly changes the way impairment of financial instruments is recognized by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of financial instruments. Upon adoption of ASU 2016-13, the Corporation recorded a $13.7 million increase in the allowance for credit losses with a corresponding cumulative effect adjustment to decrease retained earnings $10.1 million, net of income taxes. For more information on the adoption of ASU 2016-13, please refer to Note 2, "Recent Accounting Pronouncements," provided in Item 8, "Financial Statements and Supplementary Data."

The allowance for credit losses — which represents management's estimate of lifetime expected credit losses related to various portfolios subject to credit risk, off-balance sheet credit exposure, and specific borrower relationships — is determined by management through a disciplined credit review process. Northern Trust measures expected credit losses of financial assets with similar risk characteristics on a collective basis. A financial asset is measured individually if it does not share similar risk characteristics with other financial assets and the related allowance is determined through an individual evaluation.

Management's estimates utilized in establishing an appropriate level of allowance for credit losses are not dependent on any single assumption. In determining an appropriate allowance level, management evaluates numerous variables, many of which are interrelated or dependent on other assumptions and estimates, and takes into consideration past events, current conditions and reasonable and supportable forecasts. Due to the inherent imprecision in accounting estimates, other estimates or assumptions could reasonably have been used in 2020 and changes in estimates are reasonably likely to occur from period to period.

The allowance for credit losses consists of the following components:

Evaluated on a Collective Basis: Expected credit losses are measured on a collective basis as long as the financial assets included in the respective pool share similar risk characteristics. If financial assets are deemed to not share similar risk characteristics, an individual assessment is warranted.

The allowance estimation methodology for the collective assessment is primarily based on internal loss data specific to the Northern Trust financial asset portfolio from a historical observation period that includes both expansionary and recessionary periods. The estimation methodology and the related qualitative adjustment framework segregate the loan and lease portfolio into segments based on loan and obligor-specific factors, including loan type, borrower type, collateral type, loan size, and borrower credit quality. For each segment, the probability of default and loss given default are derived for each quarter of the remaining life of each instrument. For the first two years (the reasonable and supportable period), these factors are derived by applying quarterly macroeconomic projections using models developed from historical data on macroeconomic factors and loans with similar factors. For periods beyond the reasonable and supportable period, Northern Trust reverts to its long-run historical loss experiences on a straight-line basis over four quarters. The exposure at default for every quarter is based on contractual balances as of each quarter-end, with adjustments made for potential draw-downs of revolving lines.

For each of the different parameters, specific credit models for the individual loan segments were developed. For each segment, the probability of default and the loss given default are applied to the exposure at default for each projected quarter to determine the quantitative component of the allowance. The quantitative allowance is then reviewed within the qualitative adjustment framework, through which management applies judgment by assessing internal risk factors, potential limitations in the quantitative methodology, and environmental factors that are not fully contemplated in the forecast to compute an adjustment to the quantitative allowance for each segment of the loan portfolio.

ASU 2016-13 requires the use of projected macroeconomic factors. Northern Trust's current projection period is eight quarters, with a four-quarter straight-line reversion period to historical average loss rates. The Corporation uses multiple forecasts which are approved by Northern Trust's Macroeconomic Scenario Development Committee (MSDC). The baseline forecast aligns with the Corporation's latest thinking on macroeconomic projections for the next eight quarters. The forecasts are weighted at each evaluation period and are management's best estimate of future economic projections at that time.

The allowance estimate is sensitive to changes in portfolio composition and quality, and macroeconomic forecasts. Increases in the amount of borrowing and material downgrades to the quality of the lending portfolio will increase the reserve, all else equal. Similarly, deteriorating projections for macroeconomic conditions will increase the reserve. Macroeconomic factors that are particularly correlated to Northern Trust's loan and lease portfolio are equity market values, market volatility, corporate profits, house and commercial real estate price indices, unemployment, and disposable income. The investment security and other financial assets exposure portfolios are less sensitive to macroeconomic factors in terms of overall reserve impact due to factors such as high credit quality, short duration, and low historical losses.

The results of the credit reserve estimation methodology are reviewed quarterly by Northern Trust's Credit Loss Reserve Committee, which receives input from Credit Risk Management, Treasury, Corporate Finance, the Economic Research group, and each of Northern Trust's business units. The Credit Loss Reserve Committee determines the probability weights applied to each forecast approved by MSDC, and also reviews and approves qualitative adjustments to the collective allowance in line with Northern Trust's qualitative adjustment framework.

Evaluated on an Individual Basis: The allowance is determined through an individual evaluation of financial assets considered impaired that is based on expected future cash flows, the value of collateral, and other factors that may impact the borrower's ability to pay. For impaired loans for which the amount of allowance, if any, is determined based on the value of the underlying real estate collateral, third-party appraisals are typically obtained and utilized by management. These appraisals are generally less than twelve months old and are subject to adjustments to reflect management's judgment as to the realizable value of the collateral.

The quarterly analysis of the individual and collective allowance components and the control process maintained by Credit Risk Management and the lending staff are the principal methods relied upon by management for the timely identification of, and adjustment for, changes in estimated credit loss levels. In addition to Northern Trust's own experience, management also considers regulatory guidance. Control processes and analyses employed to determine an appropriate level of allowance for credit losses are reviewed on at least an annual basis and modified as considered appropriate.

Management believes that the allowance for credit losses adequately addresses these uncertainties and has been established at an appropriate level. Actual losses may vary from current estimates and the amount of the provision for credit losses may be either greater than or less than actual net charge-offs.

Pension Plan Accounting

Northern Trust maintains a noncontributory defined benefit pension plan covering substantially all U.S. employees (U.S. Qualified Plan) and a U.S. noncontributory supplemental pension plan (U.S. Non-qualified Plan). Certain European-based employees also retain benefits in local defined benefit pension plans, of which the majority are closed to new employees and to future benefit accruals. Measuring cost and reporting liabilities resulting from defined benefit pension plans requires the use of several assumptions regarding future interest rates, asset returns, compensation increases, mortality rates, and other actuarially-based projections relating to the plans. Due to the long-term nature of this obligation and the estimates that are required to be made, the assumptions used in determining the periodic pension expense and the projected pension obligation are closely monitored and reviewed annually for adjustments that may be required. Pension accounting guidance requires that differences between estimates and actual experience be recognized as other comprehensive income in the period in which they occur. The differences are amortized into net periodic pension expense from accumulated other comprehensive income over the average remaining service period of eligible participants. As a result, differences between the estimates made in the calculation of periodic pension expense and the projected pension obligation and actual experience affect stockholders' equity in the period in which they occur but continue to be recognized as expense systematically and gradually over subsequent periods.

Northern Trust recognizes the significant impact that these pension-related assumptions have on the determination of the pension obligations and related expense and has established procedures for monitoring and setting these assumptions each year. These procedures include an annual review of actual demographic and investment experience with the pension plans' actuaries. In addition to actual experience, adjustments to these assumptions consider observable yields on fixed income securities, known compensation trends and policies, as well as economic conditions and investment strategies that may impact the estimated long-term rate of return on plan assets.

In determining the pension expense for the U.S. pension plans in 2020, Northern Trust utilized a discount rate of 3.37% for both the U.S. Qualified Plan and the U.S. Non-qualified Plan. The rate of increase in the compensation level is based on a graded schedule from 9.00% to 2.50% that averaged 4.97%. The expected long-term rate of return on U.S. Qualified Plan assets was 5.25%.

In evaluating possible revisions to pension-related assumptions for the U.S. pension plans as of Northern Trust's December 31, 2020 measurement date, the following were considered:

- **Discount Rate:** Northern Trust estimates the discount rate for its U.S. pension plans by applying the plan specific projected cash flows for future benefit payments for each plan to the Aon AA Above Median yield curve as of the measurement date. This yield curve is composed of individual zero-coupon interest rates for 198 different time periods over a 99-year time horizon. Zero-coupon rates utilized by the yield curve are mathematically derived from observable market yields for AA-rated corporate bonds. This yield curve model referenced by Northern Trust in establishing the discount rate resulted in a rate of 2.75% and 2.45% at December 31, 2020 for the U.S. Qualified and U.S. Non-qualified Plans, respectively.

- **Compensation Level:** Based on a review of actual and anticipated salary experience, the compensation scale assumption is based on a graded schedule from 9.00% to 2.50% that averages 4.97%.
- **Rate of Return on Plan Assets:** The expected return on plan assets is based on an estimate of the long-term (30 years) rate of return on plan assets, which is determined using a building block approach that considers the current asset mix and estimates of return by asset class based on historical experience, giving proper consideration to diversification and rebalancing. Current market factors such as inflation and interest rates are also evaluated before long-term capital market assumptions are determined. Peer data and historical returns are reviewed to check for reasonability and appropriateness. As a result of these analyses, Northern Trust's rate of return assumption for the U.S. Qualified Plan remains at 5.25% for 2021.
- **Mortality Table:** As of December 31, 2020, Northern Trust has adopted the aggregate Pri-2012 mortality table with a 2012 base year, which was released by the Society of Actuaries in October 2019. Northern Trust's pension obligations reflect proposed future improvement under scale MP-2020, which was released by the Society of Actuaries in October 2020. This assumption was updated at December 31, 2020 from improvement scale MP-2019. The updated improvement scale applies to annuity payments only and results in slightly lower projected mortality improvement rates than estimated by the MP-2019 improvement scale. Mortality assumptions on lump sum payments remain static and continue to be in line with the IRS prescribed table for minimum lump sums in 2021.

Net pension expense in 2021 is expected to increase slightly by approximately $1.2 million, primarily driven by the decrease in discount rates in 2020.

In order to illustrate the sensitivity of these assumptions on the expected U.S pension plans' periodic pension expense in 2021 and the projected benefit obligation as of December 31, 2020, the following table is presented to show the effect of increasing or decreasing each of these assumptions by 25 basis points.

TABLE 45: SENSITIVITY OF U.S. PENSION PLANS ASSUMPTIONS

($ In Millions)	25 BASIS POINT INCREASE	25 BASIS POINT DECREASE
Increase (Decrease) in 2021 Pension Expense		
Discount Rate Change	$ (4.4)	$ 4.6
Compensation Level Change	2.5	(2.5)
Rate of Return on Plan Assets Change	(3.8)	3.8
Increase (Decrease) in 2020 Projected Benefit Obligation		
Discount Rate Change	(58.0)	61.4
Compensation Level Change	10.8	(10.4)

Pension Contributions: The deduction limits specified by the Internal Revenue Code for contributions made by sponsors of defined benefit pension plans are based on a "Target Liability" under the provisions of the Pension Protection Act of 2006. There were no contributions to the U.S. Qualified Plan for the 2020 plan year. The minimum required contribution to the U.S. Qualified Plan is expected to be zero in 2021. The maximum deductible contribution is estimated at $255.0 million for 2021.

FAIR VALUE MEASUREMENTS

The preparation of financial statements in conformity with GAAP requires certain assets and liabilities to be reported at fair value. As of December 31, 2020, approximately 25% of Northern Trust's total assets and approximately 1% of its total liabilities were carried on the consolidated balance sheets at fair value. As discussed more fully in Note 3, "Fair Value Measurements," provided in Item 8, "Financial Statements and Supplementary Data," GAAP requires entities to categorize financial assets and liabilities carried at fair value according to a three-level valuation hierarchy. The hierarchy gives the highest priority to quoted, active market prices for identical assets and liabilities (Level 1) and the lowest priority to valuation techniques that require significant management judgment because one or more of the significant inputs are unobservable in the market place (Level 3). Approximately 7% of Northern Trust's assets carried at fair value are classified as Level 1. Northern Trust typically does not hold equity securities or other instruments that are actively traded on an exchange.

Approximately 93% of Northern Trust's assets and 98% of its liabilities carried at fair value are categorized as Level 2, as they are valued using models in which all significant inputs are observable in active markets. Investment debt securities classified as available for sale make up 97% of Level 2 assets with the remaining 3% primarily consisting of derivative financial instruments. Level 2 liabilities are comprised solely of derivative financial instruments.

Northern Trust's Level 2 assets include available for sale and trading account securities, the fair values of which are determined predominantly by external pricing vendors. Northern Trust has a well-established process to validate prices received from pricing vendors as discussed more fully in Note 3, "Fair Value Measurements," provided in Item 8, "Financial Statements and Supplementary Data."

As of December 31, 2020, all derivative assets and liabilities, excluding the swap related to the sale of certain Visa Class B common shares described below, were classified as Level 2 and approximately 95%, measured on a notional value basis, related to client-related and trading activities, predominantly consisting of foreign exchange contracts. Derivative instruments are valued internally using widely accepted income-based models that incorporate inputs readily observable in actively quoted markets and reflect contractual terms of contracts. Northern Trust evaluated the impact of counterparty credit risk and its own credit risk on the valuation of derivative instruments. Factors considered included the likelihood of default by Northern Trust and its counterparties, the remaining maturities of the instruments, net exposures after giving effect to master netting agreements, available collateral, and other credit enhancements in determining the appropriate fair value of derivative instruments. The resulting valuation adjustments are not considered material.

As of December 31, 2020, Northern Trust's Level 3 liabilities consisted of swaps that Northern Trust entered into with the purchaser of 1.1 million and 1.0 million shares of Visa Inc. Class B common stock (Visa Class B common shares) previously held by Northern Trust and sold in June 2016 and 2015, respectively. Pursuant to the swaps, Northern Trust retains the risks associated with the ultimate conversion of the Visa Class B common shares into shares of Visa Inc. Class A common stock (Visa Class A common shares), such that the counterparty will be compensated for any dilutive adjustments to the conversion ratio and Northern Trust will be compensated for any anti-dilutive adjustments to the ratio. The swaps also require periodic payments from Northern Trust to the counterparty calculated by reference to the market price of Visa Class A common shares and a fixed rate of interest. The fair value of the swaps are determined using a discounted cash flow methodology. The significant unobservable inputs used in the fair value measurement are Northern Trust's own assumptions about estimated changes in the conversion rate of the Visa Class B common shares into Visa Class A common shares, the date on which such conversion is expected to occur and the estimated growth rate of the Visa Class A common share price. See "Visa Class B Common Shares" under Note 26, "Commitments and Contingent Liabilities," provided in Item 8, "Financial Statements and Supplementary Data," for further information.

While Northern Trust believes its valuation methods for its assets and liabilities carried at fair value are appropriate and consistent with other market participants, the use of different methodologies or assumptions, particularly as applied to Level 3 assets, could have a material effect on the computation of their estimated fair values.

RECENT ACCOUNTING PRONOUNCEMENTS AND DEVELOPMENTS

In January 2020, the Financial Accounting Standards Board (FASB) issued ASU No. 2020-01, "Investments—Equity Securities (Topic 321), Investments—Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815): Clarifying the Interactions between Topic 321, Topic 323, and Topic 815" (ASU 2020-01). ASU 2020-01 addresses two accounting issues: (1) application of the measurement alternative under Topic 321 in correlation with the transition into and out of the equity method under Topic 323 and (2) the measurement of certain forward contracts and purchased options to acquire equity securities. ASU 2020-01 clarifies that an entity applying the measurement alternative under Topic 321 that must transition to the equity method under Topic 323 because of an observable transaction will remeasure its investment immediately before transition, whereas an entity applying the equity method under Topic 323 that must transition to Topic 321 because of an observable transaction will remeasure its investment immediately after transition. ASU 2020-01 also clarifies that certain forward contracts or purchased call options to acquire equity securities generally will be measured using the fair value principles of Topic 321 before settlement or exercise. ASU 2020-01 is effective for interim and annual periods beginning after December 15, 2020, although early adoption is permitted. ASU 2020-01 is not expected to have a significant impact on Northern Trust's consolidated balance sheets or consolidated statements of income.

In August 2020, the FASB issued ASU No. 2020-06, "Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity" (ASU 2020-06). ASU 2020-06 simplifies the convertible instrument accounting framework through the elimination of the beneficial conversion and cash conversion accounting models used to account for convertible debt and convertible preferred stock. ASU 2020-06 also amends the accounting for certain contracts in an entity's own equity that are currently accounted for as derivatives because of specific settlement provisions in Accounting Standards Codification 815—Derivatives and Hedging. In addition, ASU 2020-06 modifies how particular convertible instruments and certain contracts that may be settled in cash or shares impact the diluted earnings per share computation. ASU 2020-06 is effective for interim and annual periods beginning after December 15, 2021, although early adoption is permitted. ASU 2020-06 is not expected to have a significant impact on Northern Trust's consolidated balance sheets or consolidated statements of income.

In October 2020, the FASB issued ASU No. 2020-08, "Codification Improvements to Subtopic 310-20, Receivables-Nonrefundable Fees and Other Costs" (ASU 2020-08). ASU 2020-08 clarifies the Codification related to the standard issued in ASU No. 2017-08, "Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities". ASU 2020-08 clarifies that an entity should amortize premiums on purchased callable debt securities to the first call date and related call amount and at that point reassess if there is a remaining premium to amortize to a subsequent call date. ASU 2020-08 is effective for interim and annual periods beginning after December 15, 2020, although early adoption is permitted. ASU 2020-08 is not expected to have a significant impact on Northern Trust's consolidated balance sheets or consolidated statements of income.

RISK MANAGEMENT

Risk Management Overview

Northern Trust employs an integrated risk management framework to support its business decisions and the execution of its corporate strategies. The framework provides a methodology to identify, manage and govern both internal and external risks to Northern Trust, and promotes a culture of risk awareness and good conduct across the organization. Northern Trust's risk culture encompasses the general awareness, attitude and conduct of employees with respect to risk and the management of risk across all lines of defense within the organization. Northern Trust cultivates a culture of effective risk management by defining and embedding risk management accountabilities in all employee performance expectations and provides training, development and performance rewards to reinforce this culture.

Northern Trust's risk management framework contains three inter-related elements, designed to support consistent enterprise risk identification, management and reporting: a comprehensive risk inventory, a static taxonomy of risk categories and a dynamic taxonomy of risk themes. The risk inventory is a detailed register of the risks inherently faced by Northern Trust. The risk categories and risk themes are classification systems used for classifying and managing the risk inventory and enabling different risk profile views. All identified risks inherent in Northern Trust's business activities are cataloged into the following risk categories: credit, operational, fiduciary, compliance, market, liquidity, and strategic risk. All material risks are also dynamically cataloged into various risk themes which are defined groupings that share common characteristics, focus on business outcomes and span across risk categories.

Northern Trust implements its risk management framework through a "three lines of defense" operating model, embedding a robust risk management capability within its businesses. The model, used to communicate risk management expectations across the organization, contains three roles, each with a complementary level of risk management accountability. Within this operating model, Northern Trust's businesses are the first line of defense for protecting it against the risks inherent in its businesses and are supported by dedicated business risk management teams. The Risk Management function, the second line of defense, sets the direction for Northern Trust's risk management activities and provides aggregate risk oversight and reporting in support of risk governance. Audit Services, the third line of defense, provides independent assurance as to the effectiveness of the integrated risk framework.

Risk Governance and Oversight Overview

Risk governance is an integral aspect of corporate governance at Northern Trust, and includes clearly defined accountabilities, expectations, internal controls and processes for risk-based decision-making and escalation of issues. The following diagram provides a high-level overview of Northern Trust's risk governance structure, highlighting oversight by the Board of Directors and key risk-related committees.

TABLE 46: RISK GOVERNANCE STRUCTURE

Northern Trust Corporation Board of Directors			
Audit Committee	Business Risk Committee -Cybersecurity Risk Oversight Subcommittee	Capital Governance Committee	Compensation and Benefits Committee

Global Enterprise Risk Committee (GERC)					
Credit Risk Committee	Operational Risk Committee	Fiduciary Risk Committee	Compliance & Ethics Oversight Committee	Market & Liquidity Risk Committee	Model Risk Oversight Committee

The Board of Directors provides oversight of risk management directly and through certain of its committees: the Audit Committee, the Business Risk Committee, the Capital Governance Committee and the Compensation and Benefits Committee. The Board of Directors approves Northern Trust's Risk Management Framework and Corporate Risk Appetite Statement. The Business Risk Committee assumes primary responsibility and oversight with respect to credit risk, operational risk, fiduciary risk, compliance risk, market risk, liquidity risk, strategic risk, and associated risk themes. The Cybersecurity Risk Oversight Subcommittee of the Business Risk Committee assists the Business Risk Committee in discharging its duties with respect to risks related to cybersecurity inherent in Northern Trust's businesses. The Audit Committee provides oversight with respect to financial reporting and legal risk, while the Compensation and Benefits Committee oversees the development and operation of Northern Trust's incentive compensation program. The Compensation and Benefits Committee annually reviews management's assessment of the effectiveness of the design and performance of Northern Trust's incentive compensation arrangements and practices in providing incentives that are consistent with Northern Trust's safety, soundness, and culture. This assessment includes an evaluation of whether Northern Trust's incentive compensation arrangements and practices discourage inappropriate risk-taking behavior by participants. The Capital Governance Committee assists the Board in discharging its oversight duties with respect to capital management and resolution planning activities. Among other responsibilities, the Capital Governance Committee oversees Northern Trust's capital adequacy assessments, forecasting, and stress testing processes and activities, including the annual CCAR exercise, and challenges management, as appropriate, on various elements of such processes and activities. Accordingly, the Capital Governance Committee provides oversight with respect to Northern Trust's linkage of material risks to the capital adequacy assessment process.

The Chief Risk Officer (CRO) oversees Northern Trust's management of risk and compliance, promotes risk awareness and fosters a proactive risk management environment wherein risks inherent in the business strategy are identified, understood, appropriately monitored and mitigated. The CRO reports directly to the Business Risk Committee and the Corporation's Chief Executive Officer. The CRO regularly advises the Business Risk Committee and reports to the Committee at least quarterly on risk exposures, risk management deficiencies and emerging risks. In accordance with the risk management framework, the CRO and the Risk Management executive leadership team of Northern Trust, together with the Chief Financial Officer, Head of Capital and Resolution Planning, General Counsel and Chief Audit Executive, meet as the Global Enterprise Risk Committee (GERC) to provide executive management oversight and guidance with respect to the management of the categories of risk and risk themes within Northern Trust. Among other risk management responsibilities, GERC receives reports, escalations, or recommendations from senior risk committees that are responsible for the management of risk, and from time to time may delegate responsibility to such committees for risk issues. Senior risk committees include:

The Credit Risk Committee (CRC) establishes and monitors credit-related policies and practices throughout Northern Trust and promotes their uniform application.

The Operational Risk Committee (ORC) provides independent oversight and is responsible for setting the operational risk-related policies and developing and implementing the operational risk management framework and programs that support coordination of operational risk activities.

The Fiduciary Risk Committee (FRC) is responsible for establishing and reviewing the fiduciary risk policies and establishing the fiduciary risk framework, governance and programs that support the coordination of fiduciary risk activities.

The Compliance & Ethics Oversight Committee (CEOC) provides oversight and direction with respect to compliance policies, implementation of the compliance and ethics program, and the coordination of regulatory compliance initiatives across the Corporation.

The Market & Liquidity Risk Committee (MLRC) oversees activities relating to the management of market and liquidity risks by facilitating a focused review of market and liquidity risk exposures and providing rigorous challenge of related policies, key assumptions, and practices.

The Model Risk Oversight Committee (MROC) is responsible for providing management attention, direction, and oversight of the model risk management framework and model risk within Northern Trust.

In addition to the aforementioned committees, Northern Trust establishes business and regional risk committees that also report into GERC.

Risk Assessment, Appetite and Reporting Processes

As part of the integrated risk framework, Northern Trust has established key risk identification and risk management processes, embedded within its businesses to enable a risk-informed profile that supports its business decisions and the execution of its corporate strategies. Northern Trust's risk assessment process consists of a series of programs across the first and second lines of defense that identify, measure, manage and report risks in line with risk appetite and guidelines.

Northern Trust defines its risk appetite as the aggregate level and types of risk the Board of Directors and senior management are willing to assume to achieve the Corporation's strategic objectives and business plan, consistent with prudent management of risk and applicable capital, liquidity, and other regulatory requirements. It includes consideration of the likelihood and impact of risks, using both monetary loss and non-financial measures across risk themes to monitor against tolerance thresholds and guideline levels that trigger escalation to risk committees, senior management, and the Board of Directors or committees thereof, as appropriate.

Risk Control

Risk Control is an internal, independent review function within the Risk Management function. Risk Control is managed by the Head of Risk Control and is comprised of Model Risk Management, Credit Review, Global Compliance Testing and Basel Independent Verification groups, each with its own risk focus and oversight. Model Risk Management is responsible for the implementation and management of the enterprise-wide model risk framework and independently validating new models and reviewing and re-validating existing models. Credit Review provides an independent, ongoing assessment of credit exposure and related credit risk management processes across Northern Trust. Global Compliance Testing evaluates the effectiveness of procedures and controls designed to comply with relevant laws and regulations, as well as corresponding Northern Trust policies governing regulatory compliance activities. Lastly, Basel Independent Verification promotes rigor and accuracy in Northern Trust's ongoing compliance with Basel III requirements and adherence to Enhanced Prudential Standards, including liquidity stress testing. The Business Risk Committee has oversight responsibility with respect to Risk Control generally as well as each of these groups.

Audit Services

Audit Services is an independent control function that assesses and validates controls within Northern Trust's risk management framework. Audit Services is managed by the Chief Audit Executive with oversight from the Audit Committee. Audit Services tests the overall adequacy and effectiveness of the system of internal controls associated with the framework on an ongoing basis and reports the results of these audits directly to the Audit Committee. Audit Services includes professionals with a broad range of audit and industry experience, including risk management expertise. The Chief Audit Executive reports directly to the Audit Committee and the Corporation's Chief Executive Officer and is a non-voting member of GERC.

Credit Risk

Credit risk is the risk to interest income or principal from the failure of a borrower, issuer, or counterparty to perform on an obligation.

Credit Risk Overview

Credit risk is inherent in many of Northern Trust's activities. A significant component of credit risk relates to loans, leases, securities, and counterparty-related exposures. Northern Trust's loan portfolio differs significantly from those of other large U.S. financial institutions in that Northern Trust is generally:

- not an originator of loan products to be sold into a secondary market or to be bundled into asset securitizations;
- not an agent bank or syndicator of loans, where risk management is achieved post-close through the sale of participations; and
- not a participant in leveraged financial transactions, such as project finance, private-equity-originated acquisition financing or hedge fund leveraging.

Credit Risk Framework and Governance

The Credit Risk Management function is the focal point of the credit risk framework and, while independent of the businesses, it works closely with them to achieve the goal of assuring proactive management of credit risk. To monitor and control credit risk, the Credit Risk Management function maintains a framework that consists of policies, standards, and programs designed to promote a prudent relationship-based credit culture. This function also monitors adherence to corporate policies, standards, programs, and external regulations.

The Credit Risk Management function provides a system of checks and balances for Northern Trust's diverse credit-related activities by monitoring these activities and practices and promoting their uniform application throughout Northern Trust.

The credit risk framework provides authorities for approval of the extension of credit. Individual credit authority for commercial and personal loans is limited to specified amounts and maturities. Credit requests exceeding individual authority because of amount, rating, term or other conditions, are referred to the relevant Group Credit Approval Committee. Credit decisions involving exposure in excess of these limits require the approval of the Senior Credit Committee. The Capital Markets Credit Committee has sole credit authority for the approval, modification, or renewal of credit exposure to all wholesale market counterparties.

The Credit Risk Committee establishes and monitors credit-related policies and programs throughout Northern Trust and promotes their uniform application. The Chief Credit Officer reports directly to the CRO and chairs the CRC. Independent oversight and review of the credit risk framework also is provided by Risk Control.

Credit Risk Measurement

An integral component of credit risk measurement is Northern Trust's internal risk rating system. Northern Trust's internal risk rating system enables identification, measurement, approval and monitoring of credit risk. Calculations include entity-specific information about the obligor's or counterparty's probability of default and exposure-specific information about loss given default, exposure at default and maturity.

The Credit Risk Management function is responsible for the ongoing oversight of each model that supports the internal risk-rating system. Independent model governance and oversight is further supported by the activities of Risk Control.

Loans and Other Extensions of Credit

A significant component of credit risk relates to the loan portfolio, including contractual obligations such as legally binding commitments to extend credit, commercial letters of credit, and standby letters of credit. These contractual obligations and arrangements are discussed in the "Off-Balance Sheet Arrangements" section and in Note 26, "Commitments and Contingent Liabilities," provided in Item 8, "Financial Statements and Supplementary Data."

Undrawn commitments to extend credit generally have fixed expiration dates or other termination clauses. Since a significant portion of the commitments are expected to expire without being drawn upon, the total commitment amount does not necessarily represent future loans or liquidity requirements. The following table provides information about the industry sector and expiration dates of undrawn commitments to extend credit as of December 31, 2020.

TABLE 47: UNDRAWN COMMITMENTS TO EXTEND CREDIT BY INDUSTRY SECTOR

AS OF DECEMBER 31, 2020		COMMITMENT EXPIRATION		
($ In Millions)	TOTAL COMMITMENTS	ONE YEAR AND LESS	OVER ONE YEAR	OUTSTANDING LOANS
Commercial				
Commercial and Institutional				
Finance and Insurance	$ 4,435.8	$ 2,454.1	$ 1,981.7	$ 3,085.0
Holding Companies	—	—	—	28.8
Manufacturing	6,945.6	1,061.3	5,884.3	1,422.8
Mining	785.6	259.5	526.1	5.2
Public Administration	98.4	98.4	—	24.1
Retail Trade	903.1	350.5	552.6	164.0
Services	6,150.7	2,626.4	3,524.3	4,329.0
Transportation and Warehousing	283.1	0.2	282.9	214.2
Utilities	1,286.2	38.3	1,247.9	7.2
Wholesale Trade	749.6	108.4	641.2	427.3
Other Commercial	195.2	100.9	94.3	350.7
Commercial and Institutional(1)	21,833.3	7,098.0	14,735.3	10,058.3
Commercial Real Estate	252.3	93.0	159.3	3,558.4
Lease Financing, net	—	—	—	11.4
Non-U.S.	1,250.2	609.0	641.2	1,345.7
Other	106.1	106.1	—	288.2
Total Commercial	23,441.9	7,906.1	15,535.8	15,262.0
Personal				
Residential Real Estate	676.1	91.2	584.9	6,035.7
Private Client	4,248.9	3,014.0	1,234.9	11,815.1
Non-U.S.	571.6	249.2	322.4	597.9
Other	—	—	—	49.0
Total Personal	5,496.6	3,354.4	2,142.2	18,497.7
Total	$ 28,938.5	$ 11,260.5	$ 17,678.0	$ 33,759.7

(1) *Commercial and Institutional industry sector information is presented on the basis of the North American Industry Classification System (NAICS).*

As part of Northern Trust's credit processes, the Credit Risk Management function oversees a range of portfolio reviews that focus on significant and/or weaker-rated credits. This approach allows management to take remedial action in an effort to deal with potential problems. An integral part of the Credit Risk Management function is a formal review of past due and potential problem loans to determine which credits, if any, need to be placed on nonaccrual status or charged off. Northern Trust maintains a loan portfolio watch list for adversely classified credit exposures that includes all nonaccrual credits as well as other loans with elevated risk of default. Independent from the Credit Risk Management function, Credit Review undertakes both on-site and off-site file reviews that evaluate effectiveness of management's implementation of the Credit Risk Management's requirements.

Counterparty Credit Risk

Counterparty credit risk for Northern Trust primarily arises from a variety of funding, treasury, trading and custody-related activities, including over-the-counter (OTC) currency and interest rate derivatives, and from indemnified securities lending transactions. Credit exposure to counterparties is managed by use of a framework for setting limits by product type and exposure tenor.

To calculate exposure, Northern Trust treats repurchase agreements, reverse repurchase agreements and indemnified securities lending transactions as repo-style transactions. Foreign exchange exposures and interest rate derivatives are treated as OTC derivatives. The exposure at default measurement methodology for each eligible type of counterparty credit exposure, including the use of netting and collateral as risk mitigants, is determined based on operational requirements, the characteristics of the contract type and the portfolio size and complexity.

Credit Risk Mitigation

Northern Trust considers cash flow to be the primary source of repayment for client-related credit exposures. However, Northern Trust employs several different types of credit risk mitigants to manage its overall credit risk in the event cash flow is not sufficient to repay a credit exposure. Northern Trust broadly groups its risk mitigation techniques into the following three primary categories.

Physical and Financial Collateral: Northern Trust's primary risk mitigation approaches include the requirement of collateral. Residential and commercial real estate exposures are typically secured by properly margined mortgages on the property. In cases where loans to commercial or certain Wealth Management clients are secured by marketable securities, the daily values of the securities are monitored closely to ensure adherence to collateral coverage policies.

Netting: On-balance sheet netting is employed where applicable for counterparties with master netting agreements. Netting is primarily related to foreign exchange transactions with major banks and institutional clients subject to eligible master netting agreements. Northern Trust has elected to take the credit risk mitigation capital benefit of netting within its regulatory capital calculation at this time.

Guarantees: Personal and corporate guarantees are often taken to facilitate potential collection efforts and to protect Northern Trust's claims relative to other creditors. Northern Trust has elected not to take the credit risk mitigation capital benefit of guarantors within its regulatory capital calculation at this time.

Another important risk management practice is the avoidance of undue concentrations of exposure, such as in any single (or small number of related) obligor/counterparty, loan type, industry, geography, country or risk mitigant. Processes are in place to establish limits on certain concentrations and the monitoring of adherence to the limits.

Operational Risk

Operational risk is the risk of loss from inadequate or failed internal processes, human factors and systems, or from external events.

Operational Risk Overview

Operational risk is inherent in each of Northern Trust's businesses and corporate functions and reflects the potential for inadequate information systems, operating problems, product design and delivery difficulties, potential legal actions, or other catastrophes to result in losses. This includes the potential that continuity of service and resiliency may be impacted.

Operational risk includes compliance, fiduciary and legal risks, which under the Corporation's risk structure are governed and managed explicitly.

Operational Risk Framework and Governance

To monitor and control operational risk, Northern Trust maintains a framework consisting of risk management policies, programs and practices designed to promote a sound operational environment and maintain the Corporation's operational risk profile and losses within approved risk appetites and guidelines. The framework is deployed consistently and globally across all businesses and its objective is to identify and measure the factors that influence risk and drive action to reduce future loss events. The Operational Risk Management function is responsible for defining the operational risk framework and providing independent oversight of the framework across Northern Trust. It is the responsibility of each business to implement the enterprise-wide operational risk framework and business-specific risk management programs to identify, monitor, measure, manage and report on operational risk and mitigate Northern Trust's exposure to loss. Several key programs support the operational risk framework, including:

- ***Loss Event Data Program*** - a program that collects internal and external loss data for use in monitoring operational risk exposure, various business analyses and a Basel Advanced Measurement Approach (AMA) capital quantification.
- ***Risk and Control Self-Assessment*** - a comprehensive, structured risk management process used by Northern Trust's businesses to identify, measure, monitor and mitigate operational risk exposures throughout the enterprise.
- ***Operational Risk Scenario Analysis*** - a systematic process of obtaining expert opinions from business managers and risk management experts to derive reasoned assessments of the likelihood of occurrence and the potential loss impact of plausible operational losses.
- ***Product and Process Risk Management Program*** - a program used for evaluating and managing risks associated with the introduction of new and modified noncredit products and services, significant changes to operating processes, and related significant loss events.
- ***Outsourcing Risk Management Program*** - a program that provides processes for appropriate risk assessment, measurement, monitoring and management of outsourced technology and business process outsourcing.
- ***Information Security and Technology Risk Management*** - a program that communicates and implements risk management processes and controls to address information security, including cyber threats, technology and compliance risks to the organization.

- ***Operational Resiliency and Recovery Management Program*** - a program designed to protect life safety, minimize business impact and support the resumption of mission-critical and economic functions for clients following an incident.
- ***Physical Security*** - a program that provides for the safety of Northern Trust partners, clients, and visitors worldwide.
- ***Insurance Management Program*** - a program designed to reduce the monetary impact of certain operational loss events.

As discussed in Risk Control, Model Risk Management also is part of the operational risk framework.

The ORC is responsible for overseeing the activities of Northern Trust related to the management of operational risk including establishing and maintaining the Corporate Operational Risk Policy and approving the operational risk framework and programs. This committee has the expanded role of coordinating operational risk issues related to compliance and fiduciary risks. The purpose of this committee is to provide executive management's insight and guidance to the management of existing and emerging operational risks. This includes identification and assessment of evolving risk trends across the operational risk framework and how these can be best managed.

Operational Risk Measurement

Northern Trust utilizes the AMA capital quantification process to estimate required capital for the Corporation and applicable U.S. banking subsidiaries. Northern Trust's AMA capital quantification process incorporates outputs from the Loss Event Data, Risk and Control Self-Assessment and Operational Risk Scenario Analysis programs to derive required capital. Business environment factor information is used to estimate loss frequency. The AMA capital quantification process uses a Loss Distribution Approach methodology to combine frequency and severity distributions to arrive at an estimate of the potential aggregate loss at the 99.9th percentile of the aggregate loss distribution over a one-year time horizon.

Information Security and Technology Risk Management

Effective management of risks related to the confidentiality, integrity and availability of information is crucial in an environment of increasing cyber threat and requires a structured approach to establish and communicate expectations and required practices. Northern Trust's information security and technology risk management framework includes a comprehensive governance structure and an Information Security and Technology Risk Management Policy and Program approved by the Business Risk Committee. The framework is supported by an organizational structure that reflects support from executive management and includes risk committees comprised of members from across the businesses, including the Information Security and Technology Risk Committee (ISTRC). The ISTRC is chaired by the Chief Information Risk Officer, who regularly reports to the Business Risk Committee on the status of the Information Security and Technology Risk Management Program.

The governance process, internal controls and risk management practices are designed to keep risk at levels appropriate to Northern Trust's overall risk appetite and the inherent risk in the markets in which Northern Trust operates. Northern Trust employees are responsible for promoting information security as well as adhering to applicable policies and standards and other means provided to them to safeguard electronic information and business systems within their care. Training and awareness programs to educate employees on information security are ongoing and include multiple approaches such as mandatory computer-based training, phishing simulations, and the designation of individuals as Information Security and Privacy Champions within the businesses. In cases where Northern Trust relies on vendors to perform services, controls are routinely reviewed for alignment with industry standards and their ability to protect information. Any findings identified are remediated following a risk-based approach.

In addition to the various information security controls managed and monitored within the organization, Northern Trust uses external third-party security teams on a regular basis to assess effectiveness. These teams perform security program maturity assessments, penetration tests, security assessments and reviews of Northern Trust's susceptibility to cyber-attacks. Northern Trust operates a global security operations center for threat identification and response. This center aggregates security threat information from systems and platforms across the businesses, and alerts the organization in accordance with its documented Cyber Incident Response Plan.

The Cyber Incident Response Plan is used to respond to cybersecurity incidents. A cybersecurity incident is defined as an incident caused by damaging activity, which requires actions to prevent and respond to disruptions, denials, compromises or exfiltration that impact the confidentiality, integrity and availability of the assets of Northern Trust or its clients. The plan provides a streamlined approach that can be invoked rapidly to address matters that raise enterprise concern and to communicate impact, actions and status to senior management, including the Chief Information Security Officer and Chief Information Risk Officer, and appropriate stakeholders. The plan is designed to work with enterprise-level response plans, and is reviewed, tested, and updated regularly.

Northern Trust's disclosure procedures and controls also address cybersecurity incidents and include elements to ensure that there is an analysis of potential disclosure obligations arising from any such incidents. Northern Trust also maintains compliance programs to address the applicability of restrictions on securities trading while in possession of material, nonpublic information, including in instances in which such information may relate to cybersecurity incidents.

Operational Resiliency and Recovery Management

Northern Trust's operational resiliency approach encompasses operational resiliency and recovery processes enterprise-wide (including staff, technology and facilities) to ensure that following a disaster or business interruption Northern Trust resumes mission-critical business and economic functions and fulfills all regulatory and legal requirements.

Northern Trust's operational resiliency mitigation and preventative measures include sophisticated physical security, resilient designs and peer capacity for its corporate data centers, a highly redundant global network, robust network security, resiliency centers that offer alternative workstations, transfer of work and work-from-home programs that provide further capability.

All of Northern Trust's businesses are required to risk-assess their critical functions regularly and develop business continuity plans covering resource requirements (people, systems, vendor relationships and other assets), arrangements for obtaining these resources and prioritizing the resumption of each function in compliance with corporate standards. The strength of the business continuity programs of all critical third-party vendors to Northern Trust are reviewed on a regular basis. All of Northern Trust's businesses test their plans at least annually. The ORC annually reviews and presents the corporate business continuity plan to the Business Risk Committee. In 2020, Northern Trust utilized these business continuity plans to respond to the COVID-19 pandemic.

Northern Trust has also begun exploring the integration of climate-related scenario analyses into its broader risk management program to help align with certain recommendations of the Task Force on Climate Related Financial Disclosures (TCFD). In the context of operational risk, the main focus of these climate-related scenario analyses is on operational resiliency and recovery. Conducting such scenario analyses and assessing the magnitude of climate-related financial and non-financial risks and opportunities related to Northern Trust's global assets is intended to position the organization to navigate uncertain climate futures more effectively.

Fiduciary Risk

Fiduciary risks are risks arising from the failure in administering or managing financial and other assets in clients' fiduciary accounts: i) to adhere to a fiduciary standard of care if required under the terms of governing documents or applicable laws; or ii) to properly discharge fiduciary duties. Fiduciary status may hinge on the nature of a particular function being performed and fiduciary standards may vary by jurisdiction, type of relationship and governing document.

Fiduciary Risk Overview

The fiduciary risk management framework identifies, assesses, measures, monitors and reports on fiduciary risk matters deemed significant. Fiduciary risk is mitigated through internal controls and risk management practices that are designed to identify, understand and keep such risk at levels consistent with the organization's overall risk appetite while also managing the inherent risk in each relationship for which Northern Trust serves in a fiduciary capacity. Each business is responsible for complying with all corporate policies and external regulations and for establishing specific procedures, standards and guidelines to manage fiduciary risk within the desired risk appetite.

Fiduciary Risk Framework and Governance

The FRC is responsible for overseeing activities related to the exercise of fiduciary powers throughout the organization and for establishing and reviewing the fiduciary risk policies and the fiduciary risk framework that supports the coordination of activities to identify, monitor, manage and report on fiduciary risk. In addition, the FRC serves as an escalation point for significant issues raised by its subcommittees or elsewhere in the organization.

Compliance Risk

Compliance risk is the risk of legal or regulatory sanctions, financial loss, or damage to reputation resulting from failure to comply with laws, regulations, rules, other regulatory requirements, or codes of conduct and other standards of self-regulatory organizations applicable to Northern Trust. Compliance risk includes the following two subcategories:

- Regulatory Risk - risk arising from failure to comply with prudential and conduct of business or other regulatory requirements.
- Financial Crime Risk - risk arising from financial crime (e.g., money laundering, sanctions violations, fraud, insider dealing, theft, etc.) in relation to the products, services, or accounts of the institution, its clients, or others associated with the same.

Compliance Risk Framework and Governance

The compliance risk management framework identifies, assesses, controls, measures, monitors and reports on compliance risk. The framework is designed to minimize compliance risk and maintain an environment in which criminal or regulatory violations do not occur. The framework includes a comprehensive governance structure and a Compliance and Ethics Program approved by the Business Risk Committee.

Each business is responsible for the implementation and effectiveness of the Compliance and Ethics Program and specific compliance policies within their respective businesses. Each business is responsible for its respective employees' compliance with corporate policies and external regulations and for establishing specific procedures, standards and guidelines to manage compliance risk in accordance with Northern Trust's Compliance and Ethics Program.

The CEOC establishes and monitors adherence to Northern Trust's Compliance and Ethics Program. The Chief Compliance and Ethics Officer reports to the Business Risk Committee, as appropriate, and chairs the CEOC.

Liquidity Risk Management

Liquidity Risk Overview

Liquidity risk is the risk of not being able to raise sufficient funds or maintain collateral to meet balance sheet and contingent liability cash flow obligations when due, because of firm-specific or market-wide stress events.

Northern Trust maintains a strong liquidity position and liquidity risk profile. Northern Trust's balance sheet is primarily liability-driven. That is, the main driver of balance sheet changes comes from changing levels of client deposits, which are generally related to the level of custody assets serviced and commercial and personal deposits and can also be influenced by market conditions. This liability-driven business model differs from a typical asset-driven business model, where increased levels of deposits and wholesale borrowings are required to support, for example, increased levels of lending. Northern Trust's balance sheet is generally comprised of high-quality assets that are managed to meet anticipated obligations under stress, resulting in low liquidity risk. Current elevated levels of client deposits driven by market conditions are actively managed and monitored.

Liquidity Risk Framework and Governance

Northern Trust maintains a liquidity risk framework consisting of risk management policies and practices to keep its risk profile within the Board-approved Corporate Risk Appetite Statement. All liquidity risk activities are overseen by the Risk Management function, which is independent of the businesses undertaking the activities.

The Liquidity Management Policy and exposure limits for liquidity risk are set by the Board, and committee structures have been established to implement and monitor adherence to corporate policies, external regulations and established procedures. Limits are monitored based on measures such as the liquidity coverage ratio (LCR) and the liquidity stress-testing buffer across a range of time horizons. Treasury, in the first line of defense, proposes liquidity risk management strategies and is responsible for performing liquidity management activities. The Asset and Liability Management Committee (ALCO) provides first line management oversight and is responsible for approving strategies and activities within the risk appetite, monitoring risk metrics, overseeing balance sheet resources, and reviewing reporting such as cash flows, LCR, and stress test results.

The Market and Liquidity Risk Management Committee (MLRC), in the second line of defense, provides challenge to the first line activities, evaluates compliance with regulatory requirements and process effectiveness, and escalates material items for corrective action. The MLRC provides second line oversight and is responsible for reviewing market and liquidity risk exposures, approving and monitoring risk metrics, and approving key methodologies and assumptions that drive liquidity risk measurement.

Liquidity Risk Analysis, Monitoring, and Reporting

Liquidity risk is analyzed and monitored in order to ensure compliance with the approved risk appetite. Various liquidity analysis and monitoring activities are employed by Northern Trust to understand better the nature and sources of its liquidity risks, including: liquidity stress testing, liquidity metric monitoring, collateral management, intraday management, cash flow projections, operational deposit modeling, liquid asset buffer measurement, funds transfer pricing, and contingency funding planning.

The liquidity risk management process is supported through management and regulatory reporting. Both Northern Trust's Treasury and Market and Liquidity Risk Management functions produce management reports that enable oversight bodies to make informed decisions and support management of liquidity risk within the approved risk appetite. Holistic liquidity metrics such as LCR and internal liquidity stress testing are actively monitored, along with a suite of other metrics that provide early warning indicators of changes in the risk profile.

Regulatory Environment

Northern Trust actively follows regulatory developments and regularly evaluates its liquidity risk management framework against proposed rule-making and industry best practices in order to comply with applicable regulations and further enhance its liquidity policies. Please refer to "Supervision and Regulation—Liquidity Standards" in Item 1, "Business," for a discussion of applicable liquidity standards.

Liquidity Coverage Ratio (LCR)

The LCR Final Rule requires covered banking organizations, which include the Corporation, to maintain an amount of high-quality liquid assets (HQLAs) equal to or greater than 100% of the banking organization's total net cash outflows over a 30 calendar-day standardized supervisory liquid stress scenario. The requirements of the LCR Final Rule are intended to promote the short-term resilience of the liquidity risk profile of covered banking organizations, improve the banking industry's ability to absorb shocks arising from financial and economic stress, and improve the measurement and management of liquidity risk. The Corporation and the Bank each satisfied the U.S. liquidity coverage ratio requirements during 2020.

Funding

Northern Trust maintains a very liquid balance sheet, with cash and due from banks, deposits with the Federal Reserve and other central banks, short-term money market assets and investment securities in aggregate representing 73% of total assets as of December 31, 2020. The market value of unencumbered securities at the Bank, which include those placed at the Federal Reserve discount window, totaled $56.8 billion at December 31, 2020.

As the Corporation's principal subsidiary encompassing all of Northern Trust's banking activities, the Bank centrally manages liquidity for all U.S. and international banking operations. Liquidity is provided by a variety of sources, including client deposits (institutional and personal) from the C&IS and Wealth Management businesses, wholesale funding from the capital markets, maturities of short-term investments, interest earned on investment securities and money market assets, Federal Home Loan Bank advances, and unencumbered liquid assets that can be sold or pledged to secure additional funds. While management does not view central bank discount windows as primary sources of liquidity, at December 31, 2020, the Bank had over $51.3 billion of securities and loans readily available as collateral to support discount window borrowings. The Bank also is active in the U.S. interbank funding market, providing an important source of additional liquidity and low-cost funds.

The liquidity of the Corporation is managed separately from that of the Bank. The primary sources of cash for the Corporation are issuances of debt or equity and dividend payments from the Bank. On May 1, 2020, the Corporation issued $1.0 billion of 1.95% senior notes, due May 1, 2030. The Corporation also received $900.0 million of dividends from the Bank in 2020. Dividends from the Bank are subject to certain restrictions, as discussed in further detail in Note 31, "Restrictions on Subsidiary Dividends and Loans or Advances," provided in Item 8, "Financial Statements and Supplementary Data."

The Corporation's liquidity, defined as the amount of cash and highly marketable assets, was $2.5 billion and $2.6 billion at December 31, 2020 and 2019, respectively. During, and at year-end, 2020 and 2019, these assets were comprised almost entirely of cash in a demand deposit account at the Bank or overnight money market placements, both of which were fully available to the Corporation to support its own cash flow requirements or those of its subsidiaries, as needed. Average liquidity during 2020 and 2019 was $2.7 billion and $2.0 billion, respectively. The cash flows of the Corporation are shown in Note 34, "Northern Trust Corporation (Corporation only)," provided in Item 8, "Financial Statements and Supplementary Data."

Uses of Liquidity

Liquidity supports a variety of activities, including client withdrawals, purchases of securities, net loan growth, and draws on commitments to extend credit.

The Corporation's uses of cash consist mainly of dividend payments to the Corporation's stockholders; the payment of principal and interest to note holders; repurchases of its common stock; and investments in, or loans to, its subsidiaries. The most significant uses of cash by the Corporation during 2020 were $584.6 million of common stock dividends and $299.8 million of common stock repurchases.

Credit Ratings

A significant source of liquidity for both the Corporation and the Bank is the ability to draw funding from capital markets globally. The credit ratings of the Corporation and the Bank as of December 31, 2020, provided in the following table, allow Northern Trust to access capital markets on favorable terms.

TABLE 48: NORTHERN TRUST CREDIT RATINGS AS OF DECEMBER 31, 2020

	CREDIT RATING		
	STANDARD & POOR'S	MOODY'S	FITCH RATINGS
Northern Trust Corporation:			
Senior Debt	A+	A2	A+
Subordinated Debt	A	A2	A+
Preferred Stock	BBB+	Baa1	BBB
Trust Preferred Capital Securities	BBB+	A3	BBB+
Outlook	Stable	Stable	Stable
The Northern Trust Company:			
Short-Term Deposit	A-1+	P-1	F1+
Long-Term Deposit/Debt	AA-	Aa2	AA
Subordinated Debt	A+	A2	A+
Outlook	Stable	Stable	Stable

A significant downgrade in one or more of these ratings could limit Northern Trust's access to capital markets and/or increase the rates paid for short-term borrowings, including deposits, and future long-term debt issuances. The size of these rate increases would depend on multiple factors, including the extent of the downgrade, Northern Trust's relative debt rating compared to other financial institutions, current market conditions, and other factors. In addition, as discussed in Note 28, "Offsetting of Assets and Liabilities," provided in Item 8, "Financial Statements and Supplementary Data," Northern Trust enters into certain master netting arrangements with derivative counterparties that contain credit-risk-related contingent features in which the counterparty has the option to declare Northern Trust in default and accelerate cash settlement of net derivative liabilities with the counterparty in the event Northern Trust's credit rating falls below specified levels. At December 31, 2020, the net maximum amount of these termination payments that Northern Trust could have been required to pay was $604.2 million. Other than these credit-risk-related contingent derivative counterparty payments, Northern Trust had no long-term debt covenants or other credit-risk-related payments at December 31, 2020, that would be triggered by a significant downgrade in its debt ratings.

Contractual Obligations

The following table shows Northern Trust's contractual obligations as of December 31, 2020.

TABLE 49: CONTRACTUAL OBLIGATIONS AS OF DECEMBER 31, 2020

		PAYMENT DUE BY PERIOD			
($ In Millions)	TOTAL	ONE YEAR AND LESS	1-3 YEARS	3-5 YEARS	OVER 5 YEARS
Senior Notes[(1)]	$ 3,122.4	$ 499.8	$ 499.6	$ —	$ 2,123.0
Subordinated Debt[(1)]	1,189.3	—	—	839.8	349.5
Floating Rate Capital Debt[(1)]	277.8	—	—	—	277.8
Operating Leases[(2)]	801.5	99.1	178.2	151.7	372.5
Purchase Obligations[(3)]	710.3	213.9	360.8	128.8	6.8
Total Contractual Obligations	$ 6,101.3	$ 812.8	$ 1,038.6	$ 1,120.3	$ 3,129.6

Note: Obligations as shown do not include deposit liabilities or interest requirements on funding sources.

(1) Refer to Note 13, "Senior Notes and Long-Term Debt," and Note 14, "Floating Rate Capital Debt," provided in Item 8, "Financial Statements and Supplementary Data," for further details.

(2) Refer to Note 10, "Lease Commitments," provided in Item 8, "Financial Statements and Supplementary Data," for further details.

(3) Purchase obligations consist of enforceable and legally binding agreements to purchase products or services at specified significant terms.

Market Risk Management

There are two types of market risk, interest rate risk associated with the assets and liabilities on the balance sheet, and trading risk. Interest rate risk associated with the assets and liabilities on the balance sheet is the potential for movements in interest rates to cause changes in net interest income and the market value of equity. Trading risk is the potential for movements in market variables such as foreign exchange and interest rates to cause changes in the value of trading positions.

Market Risk Framework and Governance

Northern Trust maintains a market risk framework consisting of risk management policies and practices to keep its risk profile within the Board-approved Corporate Risk Appetite Statement. All market risk activities are overseen by the Risk Management function, which is independent of the businesses undertaking the activities.

The Asset and Liability Management Policy, Policy on Dealer Trading Activities, and exposure limits for market risk are set by board-level committees, and committee structures have been established to implement and monitor adherence to corporate policies, external regulations and established procedures. Limits are monitored based on measures such as sensitivity of net interest income (NII), sensitivity of market value of equity (MVE), and Value-at-Risk (VaR) across a range of time horizons.

Treasury, in the first line of defense, proposes market risk management strategies and is responsible for performing market risk management activities. The ALCO provides first line management oversight and is responsible for approving strategies and activities within the risk appetite, monitoring risk metrics, overseeing balance sheet resources, overseeing the execution of strategies, and reviewing reporting such as stress test results.

Market and Liquidity Risk Management, in the second line of defense, provides challenge to the first line activities, evaluates compliance with regulatory requirements and process effectiveness, and escalates material items for corrective action. The MLRC provides second line oversight and is responsible for reviewing market risk exposures, establishing and monitoring risk metrics, and approving key methodologies and assumptions that drive market risk measurement.

Interest Rate Risk Overview

Interest rate risk associated with the assets and liabilities on the balance sheet is the potential for deterioration in Northern Trust's financial position (e.g. interest income, market value of equity, or capital) due to changes in interest rates. NII and MVE sensitivity are the primary metrics used for measurement and management of interest rate risk. Changes in interest rates can have a positive or negative impact on NII depending on the positioning of assets, liabilities and off-balance sheet instruments. Changes in interest rates also can impact the values of assets, liabilities and off-balance sheet positions, which directly impact the MVE. To mitigate interest rate risk, the balance sheet is managed so that movements of interest rates on assets and liabilities (adjusted for hedges) are sufficiently correlated, which allows Northern Trust to manage its interest rate risk within its risk appetite.

There are four commonly recognized types of structural interest rate risk associated with the assets and liabilities on the balance sheet:

- repricing risk, which arises from differences in the maturity and repricing terms of assets and liabilities;
- yield curve risk, which arises from changes in the shape of the yield curve;
- basis risk, which arises from imperfect correlation in the adjustment of the rates earned and paid on different financial instruments with otherwise similar repricing characteristics; and
- embedded optionality risk, which arises from client or counterparty behavior in response to interest rate changes.

Interest Rate Risk Analysis, Monitoring, and Reporting

Northern Trust uses two primary measurement techniques to manage interest rate risk: NII and MVE sensitivity. NII sensitivity provides management with a short-term view of the impact of interest rate changes on NII. MVE sensitivity provides management with a long-term view of interest rate changes on MVE based on the period-end balance sheet.

Northern Trust limits aggregate interest rate risk (as measured by the NII sensitivity and MVE sensitivity simulation techniques) to an acceptable level within the context of risk appetite. A variety of actions may be used to implement risk management strategies to modify interest rate risk including:

- purchase of investment securities;
- sale of investment securities that are classified as available for sale;
- issuance of senior notes and subordinated notes;
- collateralized borrowings from the Federal Home Loan Bank; and
- hedging with various types of derivative financial instruments.

NII Sensitivity

The modeling of NII sensitivity incorporates on-balance sheet positions, as well as derivative financial instruments (principally interest rate swaps) that are used to manage interest rate risk. Northern Trust uses market implied forward interest rates as the base case and measures the sensitivity (i.e., change) of a static balance sheet to changes in interest rates. Stress testing of interest rates is performed to include such scenarios as immediate parallel shocks to rates, nonparallel (i.e., twist) changes to yield curves that result in their becoming steeper or flatter, and changes to the relationship among the yield curves (i.e., basis risk).

The NII sensitivity analysis incorporates certain critical assumptions such as interest rates and client behaviors under changing rate environments. These assumptions are based on a combination of historical analysis and future expected pricing behavior. The simulation cannot precisely estimate NII sensitivity given uncertainty in the assumptions. The following key assumptions are incorporated into the NII simulation:

- the balance sheet size and mix remains constant over the simulation horizon with maturing assets and liabilities replaced with instruments with similar terms as those that are maturing, with the exception of certain nonmaturity deposits that are considered short-term in nature and therefore receive a more conservative interest-bearing treatment;
- prepayments on mortgage loans and securities collateralized by mortgages are projected under each rate scenario using a third-party mortgage analytics system that incorporates market prepayment assumptions;
- cash flows for structured securities are estimated using a third-party vendor in conjunction with the prepayments provided by the third-party mortgage analytics vendor;
- nonmaturity deposit pricing is projected based on Northern Trust's actual historical patterns and management judgment, depending upon the availability of historical data and current pricing strategies/or judgment; and
- new business rates are based on current spreads to market indices.

The following table shows the estimated NII impact over the next twelve months of 100 and 200 basis point ramps upward and 100 basis point ramp downward movements in interest rates relative to forward rates. Each rate movement is assumed to occur gradually over a one-year period.

TABLE 50: NET INTEREST INCOME SENSITIVITY AS OF DECEMBER 31, 2020

($ In Millions)	INCREASE/(DECREASE) ESTIMATED IMPACT ON NEXT TWELVE MONTHS OF NET INTEREST INCOME
INCREASE IN INTEREST RATES ABOVE MARKET IMPLIED FORWARD RATES	
100 Basis Points	**$ 249**
200 Basis Points	**451**
DECREASE IN INTEREST RATES BELOW MARKET IMPLIED FORWARD RATES	
100 Basis Points	**$ 114**

The NII sensitivity analysis does not incorporate certain management actions that may be used to mitigate adverse effects of actual interest rate movement. For that reason and others, the estimated impacts do not reflect the likely actual results but serve as estimates of interest rate risk. NII sensitivity is not comparable to actual results disclosed elsewhere or directly predictive of future values of other measures provided.

MVE Sensitivity

MVE is defined as the present value of assets minus the present value of liabilities, net of the value of financial derivatives that are used to manage the interest rate risk of balance sheet items. The potential effect of interest rate changes on MVE is derived from the impact of such changes on projected future cash flows and the present value of these cash flows and is then compared to the established limit. Northern Trust uses current market rates (and the future rates implied by these market rates) as the base case and measures MVE sensitivity under various rate scenarios. Stress testing of interest rates is performed to include such scenarios as immediate parallel shocks to rates, nonparallel (i.e., twist) changes to yield curves that result in their becoming steeper or flatter, and changes to the relationship among the yield curves (i.e., basis risk).

The MVE sensitivity analysis incorporates certain critical assumptions such as interest rates and client behaviors under changing rate environments. These assumptions are based on a combination of historical analysis and future expected pricing behavior. The simulation cannot precisely estimate MVE sensitivity given uncertainty in the assumptions. Many of the assumptions that apply to NII sensitivity also apply to MVE sensitivity simulations, with the following separate key assumptions incorporated into the MVE simulation:

- the present value of nonmaturity deposits are estimated using dynamic decay methodologies or estimated remaining lives, which are based on a combination of Northern Trust's actual historical runoff patterns and management judgment—some balances are assumed to be core and have longer lives while other balances are assumed to be temporary and have comparatively shorter lives;
- the present values of most noninterest-related balances (such as receivables, equipment, and payables) are the same as their book values; and
- Monte Carlo simulation is used to generate forward interest rate paths.

The following table shows the estimated impact on MVE of 100 and 200 basis point shocks up and a 100 basis point shock down from current market implied forward rates.

TABLE 51: MARKET VALUE OF EQUITY SENSITIVITY AS OF DECEMBER 31, 2020

($ In Millions)	INCREASE/(DECREASE) ESTIMATED IMPACT ON MARKET VALUE OF EQUITY
INCREASE IN INTEREST RATES ABOVE MARKET IMPLIED FORWARD RATES	
100 Basis Points	**$ 558**
200 Basis Points	**551**
DECREASE IN INTEREST RATES BELOW MARKET IMPLIED FORWARD RATES	
100 Basis Points	**$ 328**

The MVE simulations do not incorporate certain management actions that may be used to mitigate adverse effects of actual interest rate movements. For that reason and others, the estimated impacts do not reflect the likely actual results but serve as estimates of interest rate risk. MVE sensitivity is not comparable to actual results disclosed elsewhere or directly predictive of future values of other measures provided.

Foreign Currency Risk Overview

Northern Trust's balance sheet is exposed to nontrading foreign currency risk as a result of its holdings of non-U.S. dollar denominated assets and liabilities, investment in non-U.S. subsidiaries, and future non-U.S. dollar denominated revenue and expense. To manage currency exposures on the balance sheet, Northern Trust attempts to match its assets and liabilities by currency. If those currency offsets do not exist on the balance sheet, Northern Trust will use foreign exchange derivative contracts to mitigate its currency exposure. Foreign exchange contracts are also used to reduce Northern Trust's currency exposure to future non-U.S. dollar denominated revenue and expense.

In addition, Northern Trust provides global foreign exchange (GFX) services to clients. Most of these services are provided in connection with Northern Trust's global custody business. In the normal course of business, Northern Trust also engages in trading of non-U.S. currencies for its own account. Both activities are considered trading activities.

Foreign currency trading positions exist when aggregate obligations to purchase and sell a currency other than the U.S. dollar do not offset each other in amount, or offset each other over different time periods. The GFX trading portfolio at Northern Trust is composed of spot, forward, and non-deliverable foreign currency transactions. For GFX, spot risk is driven primarily by foreign exchange rate (FX) risk, and forward risk is driven primarily by interest rate (IR) risk.

Foreign Currency Risk Measurement

Northern Trust measures daily the risk of loss associated with all non-U.S. currency positions using a VaR model and applying the historical simulation methodology. This statistical model provides estimates, based on high confidence levels, of the potential loss in value that might be incurred if an adverse shift in non-U.S. currency exchange rates were to occur over a small number of days. The model incorporates foreign currency and interest rate volatilities and correlations in price movements among the currencies. VaR is computed for each trading desk and for the global portfolio.

VaR measures are computed in a vendor software application which reads foreign exchange positions from Northern Trust's trading systems each day. Data vendors provide foreign exchange rates and interest rates for all currencies. The Risk Management function monitors on a daily basis VaR model inputs and outputs for reasonableness.

Foreign Currency Risk Monitoring, Reporting and Analysis

Northern Trust monitors several variations of the GFX VaR measures to meet specific regulatory and internal management needs. Variations include different methodologies (historical simulation, Monte Carlo simulation and Taylor approximation), horizons of one day and ten days, confidence levels of 95% and 99%, subcomponent VaRs using only FX drivers and only IR drivers, and look-back periods of one year, two years, and four years. Those alternative measures provide management an array of corroborating metrics and alternative perspectives on Northern Trust's market risks.

Automated daily reports are produced and distributed to business managers and risk managers. The Risk Management function also reviews and reports several variations of the VaR measures in historical time series format to provide management with a historical perspective on risk.

The following table presents the levels of total regulatory VaR and its subcomponents for GFX in the years indicated below, based on the historical simulation methodology, a 99% confidence level, a one-day horizon and equally-weighted volatility. The total VaR for GFX is typically less than the sum of its two subcomponents due to diversification benefits derived from the two subcomponents.

TABLE 52: GLOBAL FOREIGN CURRENCY VALUE-AT-RISK

($ In Millions)	TOTAL VaR (FX AND IR DRIVERS)		FX VaR (FX DRIVERS ONLY)		IR VaR (IR DRIVERS ONLY)	
FOR THE YEAR ENDED DECEMBER 31,	**2020**	2019	**2020**	2019	**2020**	2019
High	**$ 1.8**	$ 0.3	**$ 1.9**	$ 0.3	**$ 1.0**	$ 0.2
Low	**—**	—	**—**	—	**—**	—
Average	**0.3**	0.1	**0.1**	0.1	**0.2**	0.1
As of December 31,	**0.3**	0.1	**0.3**	0.1	**0.2**	0.1

During 2020, Northern Trust did not incur an actual GFX trading loss in excess of the daily GFX VaR estimate. During 2019, Northern Trust experienced one day of actual GFX trading loss in excess of the daily GFX VaR estimate.

Other Nonmaterial Trading Activities

Market risk associated with other trading activities is negligible. Northern Trust's broker-dealer subsidiary, Northern Trust Securities, Inc., maintains a small portfolio of trading securities held for customer accommodation purposes, which averaged $1.1 million for the year ended December 31, 2020.

Northern Trust is also party to interest rate derivative contracts consisting mostly of interest rate swaps and swaptions entered into to meet clients' interest rate risk management needs, but also including a small number of caps and floors. All interest rate derivative transactions are executed by Northern Trust's Treasury department. When Northern Trust enters into client transactions, its practice is to mitigate the resulting market risk with offsetting interbank derivative transactions with matching terms and maturities.

Strategic Risk

Strategic risk is the vulnerability of the organization to internal or external developments that render corporate strategy ineffective or unachievable. The consequences of strategic risk can be diminished long-term earnings and capital, as well as reputational damage to the firm. Strategic risk encompasses two main areas:

- Macroeconomic and geopolitical risk centers on external events or developments that would have a detrimental impact on financial markets and/or financial services firms.
- Business risk arises from internal, secular, competitive, or regulatory trends that impact Northern Trust's stated strategy or its achievability.

Strategic Risk Framework and Governance

The Corporate Strategic Risk Framework has been developed in conjunction with the Corporation's risk appetite and risk management policies, and defines the mission and expectations of the Strategic Risk Management function to identify and analyze the sources and consequences of strategic risk.

This is achieved through participation in the establishment and review of business line strategy, coordination of risk input to the evaluation of key strategic opportunities, and developing and maintaining a risk inventory and set of metrics which attempt to gauge the level of strategic risk within the organization.

In addition, the Strategic Risk Management function maintains the Global Event Response Program, which aims to anticipate and prepare for stress scenarios, and provide an outline for responding to them when they occur.

Both GERC and the Business Risk Committee are responsible for reviewing the general methods, guidelines and frameworks by which Northern Trust monitors and evaluates strategic risk.

FORWARD-LOOKING STATEMENTS

This report may include statements which constitute "forward-looking statements" within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are identified typically by words or phrases such as "believe," "expect," "anticipate," "intend," "estimate," "project," "likely," "plan," "goal," "target," "strategy," and similar expressions or future or conditional verbs such as "may," "will," "should," "would," and "could." Forward-looking statements include statements, other than those related to historical facts, that relate to Northern Trust's financial results and outlook; capital adequacy; dividend policy and share repurchase program; accounting estimates and assumptions; credit quality including allowance levels; future pension plan contributions; effective tax rate; anticipated expense levels; contingent liabilities; acquisitions; strategies; market and industry trends; and expectations regarding the impact of accounting pronouncements and legislation. These statements are based on Northern Trust's current beliefs and expectations of future events or future results, and involve risks and uncertainties that are difficult to predict and subject to change. These statements are also based on assumptions about many important factors, including:

- the impact of the ongoing COVID-19 pandemic—and governmental and societal responses thereto—on Northern Trust's business, financial condition, and results of operations;
- financial market disruptions or economic recession in the United States or other countries across the globe resulting from any of a number of factors;
- volatility or changes in financial markets, including debt and equity markets, that impact the value, liquidity, or credit ratings of financial assets in general, or financial assets held in particular investment funds or client portfolios, including those funds, portfolios, and other financial assets with respect to which Northern Trust has taken, or may in the future take, actions to provide asset value stability or additional liquidity;
- the impact of equity markets on fee revenue;
- the downgrade of U.S. government-issued and other securities;
- changes in foreign exchange trading client volumes and volatility in foreign currency exchange rates, changes in the valuation of the U.S. dollar relative to other currencies in which Northern Trust records revenue or accrues expenses, and Northern Trust's success in assessing and mitigating the risks arising from all such changes and volatility;
- a decline in the value of securities held in Northern Trust's investment portfolio, particularly asset-backed securities, the liquidity and pricing of which may be negatively impacted by periods of economic turmoil and financial market disruptions;
- Northern Trust's ability to address operating risks, including those related to cybersecurity, data security, human errors or omissions, pricing or valuation of securities, fraud, systems performance or defects, systems interruptions, and breakdowns in processes or internal controls;
- Northern Trust's success in responding to and investing in changes and advancements in technology;
- a significant downgrade of any of Northern Trust's debt ratings;
- the health and soundness of the financial institutions and other counterparties with which Northern Trust conducts business;
- uncertainties inherent in the complex and subjective judgments required to assess credit risk and establish appropriate allowances therefor;
- changes in the availability of the London Interbank Offered Rate (LIBOR) or the calculation of alternative interest rate benchmarks;
- the pace and extent of continued globalization of investment activity and growth in worldwide financial assets;
- changes in interest rates or in the monetary or other policies of various regulatory authorities or central banks;
- changes in the legal, regulatory and enforcement framework and oversight applicable to financial institutions, including Northern Trust;
- increased costs of compliance and other risks associated with changes in regulation, the current regulatory environment, and areas of increased regulatory emphasis and oversight in the United States and other countries, such as anti-money laundering, anti-bribery, and data privacy;
- failure to satisfy regulatory standards or to obtain regulatory approvals when required, including for the use and distribution of capital;
- changes in tax laws, accounting requirements or interpretations and other legislation in the United States or other countries that could affect Northern Trust or its clients;
- geopolitical risks, risks related to global climate change and the risks of extraordinary events such as pandemics, natural disasters, terrorist events and war, and the responses of the United States and other countries to those events;
- the departure of the United Kingdom from the European Union, commonly referred to as "Brexit," and any negative effects thereof on global economic conditions, global financial markets, and our business and results of operations;
- changes in the nature and activities of Northern Trust's competition;

- Northern Trust's success in maintaining existing business and continuing to generate new business in existing and targeted markets and its ability to deploy deposits in a profitable manner consistent with its liquidity requirements;
- Northern Trust's ability to address the complex needs of a global client base and manage compliance with legal, tax, regulatory and other requirements;
- Northern Trust's ability to maintain a product mix that achieves acceptable margins;
- Northern Trust's ability to continue to generate investment results that satisfy clients and to develop an array of investment products;
- the effectiveness of Northern Trust's management of its human capital, including its success in recruiting and retaining the necessary personnel to support business growth and expansion and maintain sufficient expertise to support increasingly complex products and services;
- Northern Trust's success in implementing its expense management initiatives;
- uncertainties inherent in Northern Trust's assumptions concerning its pension plan, including discount rates and expected contributions, returns and payouts;
- Northern Trust's success in continuing to enhance its risk management practices and controls and managing risks inherent in its businesses, including credit risk, operational risk, market and liquidity risk, fiduciary risk, compliance risk and strategic risk;
- risks and uncertainties inherent in the litigation and regulatory process, including the possibility that losses may be in excess of Northern Trust's recorded liability and estimated range of possible loss for litigation exposures;
- risks associated with being a holding company, including Northern Trust's dependence on dividends from its principal subsidiary;
- the risk of damage to Northern Trust's reputation which may undermine the confidence of clients, counterparties, rating agencies, and stockholders; and
- other factors identified elsewhere in this Annual Report on Form 10-K, including those factors described in Item 1A, "Risk Factors," and other filings with the SEC, all of which are available on Northern Trust's website.

Actual results may differ materially from those expressed or implied by forward-looking statements. The information contained herein is current only as of the date of that information. All forward-looking statements included in this document are based upon information presently available, and Northern Trust assumes no obligation to update its forward-looking statements.

SUPPLEMENTAL INFORMATION

Reconciliation to Fully Taxable Equivalent

The following table presents a reconciliation of interest income, net interest income, net interest margin, and total revenue prepared in accordance with GAAP to such measures on an FTE basis, which are non-GAAP financial measures. Net interest margin is calculated by dividing annualized net interest income by average interest-earning assets. Management believes this presentation provides a clearer indication of these financial measures for comparative purposes. When adjusted to an FTE basis, yields on taxable, nontaxable and partially taxable assets are comparable; however, the adjustment to an FTE basis has no impact on net income.

TABLE 53: RECONCILIATION TO FULLY TAXABLE EQUIVALENT

	FOR THE YEAR ENDED DECEMBER 31,		
($ In Millions)	**2020**	2019	2018
Net Interest Income			
Interest Income - GAAP	**$ 1,643.5**	$ 2,499.9	$ 2,321.4
Add: FTE Adjustment	**34.4**	32.8	41.2
Interest Income (FTE) - Non-GAAP	**$ 1,677.9**	$ 2,532.7	$ 2,362.6
Net Interest Income - GAAP	**$ 1,443.2**	$ 1,677.9	$ 1,622.7
Add: FTE Adjustment	**34.4**	32.8	41.2
Net Interest Income (FTE) - Non-GAAP	**$ 1,477.6**	$ 1,710.7	$ 1,663.9
Net Interest Margin - GAAP	**1.16 %**	1.57 %	1.43 %
Net Interest Margin (FTE) - Non-GAAP	**1.19 %**	1.60 %	1.46 %
Total Revenue			
Total Revenue - GAAP	**$ 6,100.8**	$ 6,073.1	$ 5,960.2
Add: FTE Adjustment	**34.4**	32.8	41.2
Total Revenue (FTE) - Non-GAAP	**$ 6,135.2**	$ 6,105.9	$ 6,001.4

Quarterly Financial Data (Unaudited)

The following table presents quarterly financial data for years ended 2020 and 2019.

TABLE 54: QUARTERLY FINANCIAL DATA (UNAUDITED)

STATEMENTS OF INCOME	2020				2019			
($ In Millions Except Per Share Information)	FOURTH QUARTER	THIRD QUARTER	SECOND QUARTER	FIRST QUARTER	FOURTH QUARTER	THIRD QUARTER	SECOND QUARTER	FIRST QUARTER
Trust, Investment and Other Servicing Fees	$ 1,026.1	$ 1,003.8	$ 961.5	$ 1,003.6	$ 992.2	$ 975.5	$ 955.5	$ 928.9
Other Noninterest Income	161.4	152.7	172.5	176.0	134.7	144.7	133.7	130.0
Net Interest Income								
Interest Income	352.6	355.4	406.3	529.2	576.1	620.8	640.2	662.8
Interest Expense	18.2	26.8	34.2	121.1	155.3	203.1	222.8	240.8
Net Interest Income	334.4	328.6	372.1	408.1	420.8	417.7	417.4	422.0
Revenue	1,521.9	1,485.1	1,506.1	1,587.7	1,547.7	1,537.9	1,506.6	1,480.9
Provision for Credit Losses	(2.5)	0.5	66.0	61.0	(1.0)	(7.0)	(6.5)	—
Noninterest Expense	1,151.0	1,094.7	1,036.9	1,065.6	1,072.3	1,036.3	1,006.2	1,028.7
Provision for Income Taxes	132.5	95.4	89.9	100.5	105.3	124.0	117.5	105.1
Net Income	$ 240.9	$ 294.5	$ 313.3	$ 360.6	$ 371.1	$ 384.6	$ 389.4	$ 347.1
Preferred Stock Dividends	4.7	16.2	4.8	30.5	5.8	17.4	5.9	17.3
Net Income Applicable to Common Stock	$ 236.2	$ 278.3	$ 308.5	$ 330.1	$ 365.3	$ 367.2	$ 383.5	$ 329.8
PER COMMON SHARE								
Net Income – Basic	$ 1.13	$ 1.32	$ 1.47	$ 1.56	$ 1.71	$ 1.70	$ 1.76	$ 1.49
– Diluted	1.12	1.32	1.46	1.55	1.70	1.69	1.75	1.48
AVERAGE BALANCE SHEET ASSETS								
Cash and Due from Banks	$ 2,434.5	$ 2,293.3	$ 2,966.7	$ 2,723.0	$ 2,292.6	$ 2,551.5	$ 2,784.3	$ 1,940.7
Federal Reserve and Other Central Bank Deposits and Other(1)	29,896.2	31,602.3	30,299.0	19,826.2	17,230.0	17,524.9	19,236.2	20,163.2
Interest-Bearing Due from and Deposits with Banks(2)	5,449.0	4,816.1	5,505.7	5,838.1	6,073.9	5,656.5	5,811.9	6,452.2
Federal Funds Sold	0.6	2.5	0.1	5.9	3.8	4.6	5.3	38.0
Securities Purchased under Agreements to Resell	1,565.8	1,789.8	985.8	661.7	942.1	812.3	645.6	940.1
Securities(3)	61,227.4	58,072.1	52,884.4	51,963.2	51,919.0	50,024.9	48,911.2	51,889.3
Loans and Leases	33,096.1	33,085.2	35,506.7	32,316.2	30,990.8	30,935.9	31,098.9	31,189.4
Allowance for Credit Losses	(222.7)	(218.4)	(160.2)	(109.9)	(105.5)	(111.2)	(115.1)	(114.0)
Other Assets	9,815.1	9,482.5	10,782.4	10,946.1	8,758.6	8,952.7	7,980.6	6,917.8
Total Assets	$ 143,262.0	$ 140,925.4	$ 138,770.6	$ 124,170.5	$ 118,105.3	$ 116,352.1	$ 116,358.9	$ 119,416.7
LIABILITIES AND STOCKHOLDERS' EQUITY								
Deposits								
Demand and Other Noninterest-Bearing	$ 26,997.5	$ 25,202.3	$ 21,856.7	$ 19,331.5	$ 17,462.9	$ 16,687.3	$ 17,826.5	$ 17,858.4
Savings, Money Market, and Other	24,984.3	24,305.4	24,017.0	20,251.2	18,130.2	17,802.7	15,950.9	14,372.8
Savings Certificates and Other Time	1,198.3	1,502.1	1,403.6	959.8	919.0	898.9	888.6	761.4
Non-U.S. Offices – Interest-Bearing	61,943.6	61,834.9	63,592.7	54,543.3	52,925.8	53,631.5	54,679.9	58,377.2
Total Deposits	115,123.7	112,844.7	110,870.0	95,085.8	89,437.9	89,020.4	89,345.9	91,369.8
Federal Funds Purchased	562.7	275.6	1,181.0	1,916.5	856.6	595.4	1,298.3	2,342.9
Securities Sold under Agreements to Repurchase	183.6	185.3	170.7	334.3	281.0	340.3	394.5	340.7
Other Borrowings	5,984.4	6,167.8	6,008.4	7,450.6	7,632.9	7,833.1	7,734.8	7,810.4
Senior Notes	3,315.4	3,666.3	3,332.9	2,615.1	2,584.6	2,587.7	2,361.4	2,014.1
Long-Term Debt	1,190.9	1,199.0	1,198.3	1,168.7	1,154.0	1,156.7	1,131.6	1,112.9
Floating Rate Capital Debt	277.8	277.7	277.7	277.7	277.7	277.7	277.6	277.6
Other Liabilities	5,090.4	4,906.1	4,690.2	4,534.8	4,948.0	3,853.0	3,276.7	3,719.5
Stockholders' Equity	11,533.1	11,402.9	11,041.4	10,787.0	10,932.6	10,687.8	10,538.1	10,428.8
Total Liabilities and Stockholders' Equity	$ 143,262.0	$ 140,925.4	$ 138,770.6	$ 124,170.5	$ 118,105.3	$ 116,352.1	$ 116,358.9	$ 119,416.7

(1) Federal Reserve and Other Central Bank Deposits and Other includes collateral deposits with certain securities depositories and clearing houses, which are classified in Other Assets on the consolidated balance sheets as of December 31, 2020, and 2019.

(2) Interest-Bearing Due from and Deposits with Banks includes the interest-bearing component of Cash and Due from Banks and Interest-Bearing Deposits with Banks as presented on the consolidated balance sheets as of December 31, 2020, and 2019..

(3) Securities include Federal Reserve and Federal Home Loan Bank stock and certain community development investments which are classified in Other Assets on the consolidated balance sheets as of December 31, 2020 and 2019.

ITEM 7A – QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information called for by this item is incorporated herein by reference to the "Risk Management" section of Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Form 10-K.

ITEM 8 – FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

In addition to the Report of Independent Registered Public Accounting Firm and the consolidated financial statements and accompanying notes provided below, the table titled "Quarterly Financial Data (Unaudited)" in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this Form 10-K is incorporated herein by reference.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

TO THE STOCKHOLDERS AND BOARD OF DIRECTORS OF NORTHERN TRUST CORPORATION:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Northern Trust Corporation and subsidiaries (the Corporation) as of December 31, 2020 and 2019, the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Corporation as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Corporation's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 23, 2021 expressed an unqualified opinion on the effectiveness of the Corporation's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Corporation has changed its method of accounting for the recognition and measurement of credit losses as of January 1, 2020 due to the adoption of ASC Topic 326, *Financial Instruments – Credit Losses*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter 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.

Assessment of the allowance for credit losses for commercial loans and leases evaluated on a collective basis

As discussed in Notes 1 and 7 to the consolidated financial statements, the Corporation's allowance for credit losses for commercial loans and leases evaluated on a collective basis (the collective ACL) was $133.4 million of a total allowance for credit losses assigned to loans and leases of $190.7 million as of December 31, 2020. Expected credit losses are measured on a collective basis as long as the financial assets included in the respective pool share similar risk characteristics. The allowance estimation methodology for the collective assessment is primarily based on internal loss data specific to the Corporation's financial asset portfolio from a historical observation period that includes both expansionary and recessionary periods. The estimation methodology and the related qualitative adjustment framework segregate the loan and lease portfolio into segments based on loan and obligor specific factors, including loan type, borrower type, collateral type, loan size, and borrower credit quality. The estimation methodology applies probability of default and loss given default assumptions to the exposure at default on a pool basis. For each segment, the probability of default (PD) and loss given default (LGD) are derived for each quarter of the remaining life of each instrument. For the first two years (the reasonable and supportable period), these factors are derived by applying quarterly macroeconomic projections using models developed from historical data on macroeconomic factors and loans with similar factors, including the borrower rating assigned to individual obligors, as applicable. For periods beyond the reasonable and supportable period, the Corporation reverts to its own long-run historical loss experience on a straight-line basis over four quarters. The exposure at default for every quarter is based on contractual balances as of each quarter-end. Estimating expected lifetime credit losses requires the consideration of the effect of future economic conditions. The Corporation employs multiple scenarios over a reasonable and supportable period to project future conditions. The Corporation determines the probability weights assigned to each scenario at each quarter-end. The quantitative allowance is then reviewed within the qualitative adjustment framework, through which the Corporation applies judgment by assessing internal risk factors, potential limitations in the quantitative methodology, and environmental factors that are not fully contemplated in the forecast to compute an adjustment to the quantitative allowance for each segment of the loan portfolio.

We identified the assessment of the quantitative component of the collective ACL as a critical audit matter. A high degree of audit effort, including specialized skills and knowledge, and subjective and complex auditor judgment was involved in the assessment of the quantitative component of the collective ACL due to significant measurement uncertainty. Specifically, the assessment encompassed the evaluation of the quantitative component of the collective ACL methodology, including the methods and models used to estimate the PD and LGD and their significant assumptions, including the multiple economic forecast scenarios and macroeconomic factors and their respective weightings, the reasonable and supportable period, the historical observation period, and borrower ratings for certain commercial loans and leases. In addition, auditor judgment was required to evaluate the sufficiency of audit evidence obtained.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and operating effectiveness of certain internal controls related to the critical audit matter. This included controls related to the Corporation's measurement of the quantitative component of the collective ACL estimate, including controls over:

- development of the quantitative component of the collective ACL methodology
- development of the PD and LGD models
- ongoing monitoring of the PD and LGD models
- development and approval of the multiple economic forecast scenarios, macroeconomic factors and their respective weightings
- determination and measurement of the significant assumptions used in the PD and LGD models
- analysis of the allowance for credit losses for loans and leases results.

We evaluated the Corporation's process to develop the quantitative component of the collective ACL estimate by testing certain sources of data, factors, and assumptions that the Corporation used, and considered the relevance and reliability of such data, factors and assumptions. In addition, we involved credit risk professionals with specialized skills and knowledge, who assisted in:

- evaluating the quantitative component of the Corporation's collective ACL methodology for compliance with U.S. generally accepted accounting principles

- evaluating judgments made by the Corporation relative to the development and performance monitoring of the PD and LGD models
- assessing the conceptual soundness and performance testing of the PD and LGD models by inspecting model documentation to determine whether the models were suitable for their intended use
- assessing the economic forecast scenarios, the economic input variables and their respective weightings through comparison to publicly available forecasts and the Corporation's business environment
- evaluating the length of the historical observation period and reasonable and supportable period by comparing them to specific portfolio risk characteristics and trends
- testing individual borrower ratings for a selection of commercial loan and lease relationships by evaluating the financial performance of the borrower, sources of repayment, and any relevant guarantees or underlying collateral, where applicable.

We also assessed the sufficiency of the audit evidence obtained related to the quantitative component of the collective ACL by evaluating the:

- cumulative results of the procedures
- qualitative aspects of the Corporation's accounting practices
- potential bias in the accounting estimate

KPMG LLP

We have served as the Corporation's auditor since 2002.

CHICAGO, ILLINOIS
FEBRUARY 23, 2021

CONSOLIDATED BALANCE SHEETS

(In Millions Except Share Information)	DECEMBER 31, 2020	2019
ASSETS		
Cash and Due from Banks	**$ 4,389.5**	$ 4,459.2
Federal Reserve and Other Central Bank Deposits	**55,503.6**	33,886.0
Interest-Bearing Deposits with Banks	**4,372.6**	4,877.1
Federal Funds Sold	**—**	5.0
Securities Purchased under Agreements to Resell	**1,596.5**	707.8
Debt Securities		
Available for Sale (Amortized cost of $41,155.7 and $38,722.2)	**42,022.0**	38,876.3
Held to Maturity (Fair value of $17,797.4 and $12,249.3)	**17,791.1**	12,284.5
Trading Account	**0.5**	0.3
Total Debt Securities	**59,813.6**	51,161.1
Loans and Leases		
Commercial	**15,262.0**	14,001.3
Personal	**18,497.7**	17,408.3
Total Loans and Leases (Net of unearned income of $9.8 and $14.1)	**33,759.7**	31,409.6
Allowance for Credit Losses	**(198.8)**	(104.5)
Buildings and Equipment	**514.9**	483.3
Client Security Settlement Receivables	**1,160.2**	845.7
Goodwill	**707.2**	696.8
Other Assets	**8,384.9**	8,401.3
Total Assets	**$ 170,003.9**	$ 136,828.4
LIABILITIES		
Deposits		
Demand and Other Noninterest-Bearing	**$ 17,728.5**	$ 14,114.7
Savings, Money Market and Other Interest-Bearing	**28,631.8**	21,441.5
Savings Certificates and Other Time	**937.1**	986.7
Non U.S. Offices — Noninterest-Bearing	**25,382.2**	12,177.4
— Interest-Bearing	**71,198.4**	60,400.3
Total Deposits	**143,878.0**	109,120.6
Federal Funds Purchased	**260.2**	552.9
Securities Sold Under Agreements to Repurchase	**39.8**	489.7
Other Borrowings	**4,011.5**	6,744.8
Senior Notes	**3,122.4**	2,573.0
Long-Term Debt	**1,189.3**	1,148.1
Floating Rate Capital Debt	**277.8**	277.7
Other Liabilities	**5,536.6**	4,830.6
Total Liabilities	**158,315.6**	125,737.4
STOCKHOLDERS' EQUITY		
Preferred Stock, No Par Value; Authorized 10,000,000 shares:		
Series C, outstanding shares of 0 and 16,000	**—**	388.5
Series D, outstanding shares of 5,000	**493.5**	493.5
Series E, outstanding shares of 16,000	**391.4**	391.4
Common Stock, $1.66 2/3 Par Value; Authorized 560,000,000 shares; Outstanding shares of 208,289,178 and 209,709,046	**408.6**	408.6
Additional Paid-In Capital	**963.6**	1,013.1
Retained Earnings	**12,207.7**	11,656.7
Accumulated Other Comprehensive Income (Loss)	**428.0**	(194.7)
Treasury Stock (36,882,346 and 35,462,478 shares, at cost)	**(3,204.5)**	(3,066.1)
Total Stockholders' Equity	**11,688.3**	11,091.0
Total Liabilities and Stockholders' Equity	**$ 170,003.9**	$ 136,828.4

See accompanying notes to consolidated financial statements on pages 94-168.

CONSOLIDATED STATEMENTS OF INCOME

(In Millions Except Share Information)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
Noninterest Income			
Trust, Investment and Other Servicing Fees	**$ 3,995.0**	$ 3,852.1	$ 3,753.7
Foreign Exchange Trading Income	**290.4**	250.9	307.2
Treasury Management Fees	**45.4**	44.5	51.8
Security Commissions and Trading Income	**133.2**	103.6	98.3
Other Operating Income	**194.0**	145.5	127.5
Investment Security Gains (Losses), net (Note)	**(0.4)**	(1.4)	(1.0)
Total Noninterest Income	**4,657.6**	4,395.2	4,337.5
Net Interest Income			
Interest Income	**1,643.5**	2,499.9	2,321.4
Interest Expense	**200.3**	822.0	698.7
Net Interest Income	**1,443.2**	1,677.9	1,622.7
Provision for Credit Losses	**125.0**	(14.5)	(14.5)
Net Interest Income after Provision for Credit Losses	**1,318.2**	1,692.4	1,637.2
Noninterest Expense			
Compensation	**1,947.1**	1,859.0	1,806.9
Employee Benefits	**387.7**	355.2	356.7
Outside Services	**763.1**	774.5	739.4
Equipment and Software	**673.5**	612.1	582.2
Occupancy	**230.1**	212.9	201.1
Other Operating Expense	**346.7**	329.8	330.6
Total Noninterest Expense	**4,348.2**	4,143.5	4,016.9
Income before Income Taxes	**1,627.6**	1,944.1	1,957.8
Provision for Income Taxes	**418.3**	451.9	401.4
NET INCOME	**$ 1,209.3**	$ 1,492.2	$ 1,556.4
Preferred Stock Dividends	**56.2**	46.4	46.4
Net Income Applicable to Common Stock	**$ 1,153.1**	$ 1,445.8	$ 1,510.0
PER COMMON SHARE			
Net Income – Basic	**$ 5.48**	$ 6.66	$ 6.68
– Diluted	**5.46**	6.63	6.64
Average Number of Common Shares Outstanding – Basic	**208,319,412**	214,525,547	223,148,335
– Diluted	**209,007,986**	215,601,149	224,488,326
Note: Changes in Other-Than-Temporary-Impairment (OTTI) Losses prior to the adoption of ASU 2016-13	**$ —**	$ (0.3)	$ (0.5)
Other Security Gains (Losses), net	**(0.4)**	(1.1)	(0.5)
Investment Security Gains (Losses), net	**$ (0.4)**	$ (1.4)	$ (1.0)

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
Net Income	**$ 1,209.3**	$ 1,492.2	$ 1,556.4
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)			
Net Unrealized Gains on Debt Securities Available for Sale	**527.8**	228.9	(22.3)
Net Unrealized Gains (Losses) on Cash Flow Hedges	**0.5**	(7.7)	(1.4)
Net Foreign Currency Adjustments	**26.9**	49.9	22.2
Net Pension and Other Postretirement Benefit Adjustments	**67.5**	(12.1)	(12.6)
Other Comprehensive Income	**622.7**	259.0	(14.1)
Comprehensive Income	**$ 1,832.0**	$ 1,751.2	$ 1,542.3

See accompanying notes to consolidated financial statements on pages 94-168.

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

(In Millions Except Per Share Information)	PREFERRED STOCK	COMMON STOCK	ADDITIONAL PAID-IN CAPITAL	RETAINED EARNINGS	ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)	TREASURY STOCK	TOTAL
Balance at January 1, 2018	$ 882.0	$ 408.6	$ 1,047.2	$ 9,685.1	$ (414.3)	$ (1,392.4)	$ 10,216.2
Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income	—	—	—	25.3	(25.3)	—	—
Change in Accounting Principle	—	—	—	(4.5)	—	—	(4.5)
Net income	—	—	—	1,556.4	—	—	1,556.4
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	(14.1)	—	(14.1)
Dividends Declared:							
Common Stock, $1.94 per share	—	—	—	(439.1)	—	—	(439.1)
Preferred Stock	—	—	—	(46.4)	—	—	(46.4)
Stock Awards and Options Exercised	—	—	21.3	—	—	142.8	164.1
Stock Purchased	—	—	—	—	—	(924.3)	(924.3)
Balance at December 31, 2018	$ 882.0	$ 408.6	$ 1,068.5	$ 10,776.8	$ (453.7)	$ (2,173.9)	$ 10,508.3
Net income	—	—	—	1,492.2	—	—	1,492.2
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	259.0	—	259.0
Dividends Declared:							
Common Stock, $2.60 per share	—	—	—	(565.9)	—	—	(565.9)
Preferred Stock	—	—	—	(46.4)	—	—	(46.4)
Issuance of Preferred Stock, Series E	391.4	—	—	—	—	—	391.4
Stock Awards and Options Exercised	—	—	(55.4)	—	—	208.0	152.6
Stock Purchased	—	—	—	—	—	(1,100.2)	(1,100.2)
Balance at December 31, 2019	$ 1,273.4	$ 408.6	$ 1,013.1	$ 11,656.7	$ (194.7)	$ (3,066.1)	$ 11,091.0
Cumulative Effect Adjustment related to the adoption of Accounting Standards Update 2016-13	—	—	—	(10.1)	—	—	(10.1)
Balance at January 1, 2020	1,273.4	408.6	1,013.1	11,646.6	(194.7)	(3,066.1)	11,080.9
Net income	—	—	—	1,209.3	—	—	1,209.3
Other Comprehensive Income (Loss) (Net of Tax and Reclassifications)	—	—	—	—	622.7	—	622.7
Dividends Declared:							
Common Stock, $2.80 per share	—	—	—	(592.0)	—	—	(592.0)
Preferred Stock	—	—	—	(44.7)	—	—	(44.7)
Redemption of Preferred Stock, Series C	(388.5)	—	—	(11.5)	—	—	(400.0)
Stock Awards and Options Exercised	—	—	(49.5)	—	—	161.4	111.9
Stock Purchased	—	—	—	—	—	(299.8)	(299.8)
Balance at December 31, 2020	**$ 884.9**	**$ 408.6**	**$ 963.6**	**$ 12,207.7**	**$ 428.0**	**$ (3,204.5)**	**$ 11,688.3**

See accompanying notes to consolidated financial statements on pages 94-168.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES			
Net Income	**$ 1,209.3**	$ 1,492.2	$ 1,556.4
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities			
Investment Security (Losses) Gains, net	**0.4**	1.4	1.0
Amortization and Accretion of Securities and Unearned Income, net	**88.9**	64.6	95.9
Provision for Credit Losses	**125.0**	(14.5)	(14.5)
Depreciation and Amortization	**500.3**	458.9	460.9
Change in Accrued Income Taxes	**25.4**	(70.7)	(130.0)
Pension Plan Contributions	**(15.6)**	(6.1)	(74.5)
Deferred Income Tax Provision	**16.4**	34.3	10.5
Change in Receivables	**4.5**	(50.3)	(197.0)
Change in Interest Payable	**(23.6)**	(23.6)	28.5
Change in Collateral With Derivative Counterparties, net	**(17.8)**	1,154.0	(699.6)
Other Operating Activities, net	**(16.4)**	(448.2)	729.9
Net Cash Provided by Operating Activities	**1,896.8**	2,592.0	1,767.5
CASH FLOWS FROM INVESTING ACTIVITIES			
Change in Federal Funds Sold	**5.0**	129.0	(113.0)
Change in Securities Purchased under Agreements to Resell	**(700.9)**	357.3	218.7
Change in Interest-Bearing Deposits with Banks	**712.6**	(614.6)	1,073.8
Net Change in Federal Reserve and Other Central Bank Deposits	**(19,845.2)**	(3,683.2)	9,679.6
Purchases of Debt Securities – Held to Maturity	**(40,187.9)**	(14,154.3)	(21,463.1)
Proceeds from Maturity and Redemption of Debt Securities – Held to Maturity	**35,658.6**	16,290.9	20,036.7
Purchases of Debt Securities – Available for Sale	**(10,886.8)**	(12,811.0)	(12,596.9)
Proceeds from Sale, Maturity and Redemption of Debt Securities – Available for Sale	**8,748.2**	11,057.2	8,958.7
Change in Loans and Leases	**(2,316.7)**	1,087.9	66.1
Purchases of Buildings and Equipment	**(135.8)**	(158.0)	(97.6)
Purchases and Development of Computer Software	**(424.6)**	(441.8)	(408.4)
Change in Client Security Settlement Receivables	**(226.8)**	821.0	(49.7)
Acquisition of a Business, Net of Cash Received	**—**	(10.5)	(104.2)
Bank-Owned Life Insurance Policy Premiums	**—**	(1,500.0)	—
Other Investing Activities, net	**(322.7)**	225.1	(873.6)
Net Cash (Used in) Provided by Investing Activities	**(29,923.0)**	(3,405.0)	4,327.1
CASH FLOWS FROM FINANCING ACTIVITIES			
Change in Deposits	**32,137.9**	4,263.6	(6,163.2)
Change in Federal Funds Purchased	**(292.7)**	(2,041.3)	308.1
Change in Securities Sold under Agreements to Repurchase	**(450.0)**	320.9	(665.2)
Change in Short-Term Other Borrowings	**(2,698.3)**	(1,184.5)	1,860.9
Redemption of Preferred Stock - Series C	**(400.0)**	—	—
Proceeds from Senior Notes	**993.2**	498.0	497.9
Repayments of Senior Notes	**(508.6)**	—	(314.3)
Proceeds from Issuance of Preferred Stock - Series E	**—**	392.5	—
Treasury Stock Purchased	**(299.8)**	(1,100.2)	(924.3)
Net Proceeds from Stock Options	**19.5**	44.0	32.6
Cash Dividends Paid on Common Stock	**(584.6)**	(529.7)	(405.4)
Cash Dividends Paid on Preferred Stock	**(45.9)**	(46.4)	(46.4)
Other Financing Activities, net	**1.2**	(1.0)	1.1
Net Cash Provided by (Used In) Financing Activities	**27,871.9**	615.9	(5,818.2)
Effect of Foreign Currency Exchange Rates on Cash	**84.6**	74.7	(212.9)
Change in Cash and Due from Banks	**(69.7)**	(122.4)	63.5
Cash and Due from Banks at Beginning of Year	**4,459.2**	4,581.6	4,518.1
Cash and Due from Banks at End of Year	**$ 4,389.5**	$ 4,459.2	$ 4,581.6
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION			
Interest Paid	**$ 226.8**	$ 845.5	$ 670.2
Income Taxes Paid	**327.7**	437.0	493.5
Transfers from Loans to OREO	**0.2**	3.5	11.4
Transfers from Available for Sale to Held to Maturity	**301.5**	160.8	—
Transfers to Leases Held For Sale from Leases	**—**	53.6	—

See accompanying notes to consolidated financial statements on pages 94-168.

Note 1 – Summary of Significant Accounting Policies

The consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (GAAP) and reporting practices prescribed for the banking industry. A description of the more significant accounting policies follows.

A. Basis of Presentation. The consolidated financial statements include the accounts of Northern Trust Corporation (Corporation) and its wholly-owned subsidiary, The Northern Trust Company (Bank), and various other wholly-owned subsidiaries of the Corporation and Bank. Throughout the notes to the consolidated financial statements, the term "Northern Trust" refers to the Corporation and its subsidiaries. Intercompany balances and transactions have been eliminated in consolidation. The consolidated statements of income include results of acquired subsidiaries from the dates of acquisition. Certain prior-year balances have been reclassified consistent with the current year's presentation.

B. Nature of Operations. The Corporation is a bank holding company that has elected to be a financial holding company under the Bank Holding Company Act of 1956, as amended. The Bank is an Illinois banking corporation headquartered in Chicago and the Corporation's principal subsidiary. The Corporation conducts business in the United States (U.S.) and internationally through various U.S. and non-U.S. subsidiaries, including the Bank.

Northern Trust generates the majority of its revenue from its two client-focused reporting segments: Corporate & Institutional Services (C&IS) and Wealth Management. Asset management and related services are provided to C&IS and Wealth Management clients primarily by the Asset Management business.

C&IS is a leading global provider of asset servicing and related services to corporate and public retirement funds, foundations, endowments, fund managers, insurance companies, sovereign wealth funds, and other institutional investors around the globe. Asset servicing and related services encompass a full range of capabilities including but not limited to: global custody; fund administration; investment operations outsourcing; investment management; investment risk and analytical services; employee benefit services; securities lending; foreign exchange; treasury management; brokerage services; transition management services; banking and cash management. Client relationships are managed through the Bank and the Bank's and the Corporation's other subsidiaries, including support from locations in North America, Europe, the Middle East, and the Asia-Pacific region.

Wealth Management focuses on high-net-worth individuals and families, business owners, executives, professionals, retirees, and established privately-held businesses in its target markets. The business also includes the Global Family Office, which provides customized services to meet the complex financial needs of individuals and family offices in the U.S. and throughout the world with assets typically exceeding $200 million. In supporting these targeted segments, Wealth Management provides trust, investment management, custody, and philanthropic services; financial consulting; guardianship and estate administration; family business consulting; family financial education; brokerage services; and private and business banking. Wealth Management services are delivered by multidisciplinary teams through a network of offices in 19 U.S. states and Washington, D.C., as well as offices in London, Guernsey, and Abu Dhabi.

C. Use of Estimates in the Preparation of Financial Statements. The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions in the application of certain of our significant accounting policies that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expense during the reporting period. Actual results could differ from those estimates.

D. Foreign Currency Remeasurement and Translation. Asset and liability accounts denominated in nonfunctional currencies are remeasured into functional currencies at period-end rates of exchange, except for certain balance sheet items including but not limited to buildings and equipment, goodwill and other intangible assets, which are remeasured at historical exchange rates. Results from remeasurement of asset and liability accounts are reported in Other Operating Income as currency translation gains (losses), net, on the consolidated statements of income. Income and expense accounts are remeasured at period-average rates of exchange.

Asset and liability accounts of entities with functional currencies that are not the U.S. dollar are translated at period-end rates of exchange. Income and expense accounts are translated at period-average rates of exchange. Translation adjustments, net of applicable taxes, are reported directly to accumulated other comprehensive income (AOCI), a component of stockholders' equity.

E. Securities. ***Securities Available for Sale*** are reported at fair value, with unrealized gains and losses credited or charged, net of the tax effect, to AOCI. Realized gains and losses on securities available for sale are determined on a specific identification basis and are reported within Investment Security Gains (Losses), net, on the consolidated statements of income. Interest income is recorded on the accrual basis, adjusted for the amortization of premium and accretion of discount.

Securities Held to Maturity consist of debt securities that management intends to, and Northern Trust has the ability to, hold until maturity. Such securities are reported at cost, adjusted for amortization of premium and accretion of discount. Interest income is recorded on the accrual basis adjusted for the amortization of premium and accretion of discount.

Securities Held for Trading are reported at fair value. Realized and unrealized gains and losses on securities held for trading are reported within Security Commissions and Trading Income on the consolidated statements of income.

Nonmarketable Securities primarily consist of Federal Reserve Bank of Chicago and Federal Home Loan Bank stock and community development investments, each of which are recorded in Other Assets on the consolidated balance sheets. Federal Reserve Bank of Chicago and Federal Home Loan Bank stock are reported at cost, which represents redemption value. Community development investments are typically reported at amortized cost. Those community development investments that are designed to generate a return primarily through realization of tax credits and other tax benefits, which are discussed in further detail in Note 29, “Variable Interest Entities,” are amortized over the lives of the related tax credits and other tax benefits.

F. Securities Purchased Under Agreements to Resell and Securities Sold Under Agreements to Repurchase. Northern Trust participates in the repurchase agreement market as a relatively low cost alternative for short-term funding. Securities purchased under agreements to resell and securities sold under agreements to repurchase are accounted for as collateralized financings and recorded at the amounts at which the securities were acquired or sold plus accrued interest. To minimize any potential credit risk associated with these transactions, the fair value of the securities purchased or sold is monitored, limits are set on exposure with counterparties, and the financial condition of counterparties is regularly assessed. It is Northern Trust’s policy to take possession, either directly or via third-party custodians, of securities purchased under agreements to resell. Securities sold under agreements to repurchase are held by the counterparty until the repurchase.

G. Derivative Financial Instruments. Northern Trust is a party to various derivative financial instruments that are used in the normal course of business to meet the needs of its clients, as part of its trading activity for its own account, and as part of its risk management activities. These instruments generally include foreign exchange contracts, interest rate contracts, total return swap contracts and credit default swap contracts. All derivative financial instruments, whether designated as hedges or not, are recorded at fair value within Other Assets and Other Liabilities on the consolidated balance sheets. Derivative asset and liability positions with the same counterparty are reflected on a net basis on the consolidated balance sheets in cases where legally enforceable master netting arrangements or similar agreements exist. These derivative assets and liabilities are further reduced by cash collateral received from, and deposited with, derivative counterparties. The accounting for changes in the fair value of a derivative on the consolidated statements of income depends on whether or not the contract has been designated as a hedge and qualifies for hedge accounting under GAAP. Derivative financial instruments are recorded within the line item, Other Operating Activities, net, on the consolidated statement of cash flows, except for net investment hedges which are recorded within Other Investing Activities, net.

Changes in the fair value of client-related and trading derivative instruments, which are not designated hedges under GAAP, are recognized currently in either Foreign Exchange Trading Income or Security Commissions and Trading Income on the consolidated statements of income. Changes in the fair value of derivative instruments entered into for risk management purposes but not designated as hedges are recognized currently in Other Operating Income on the consolidated statements of income. Certain derivative instruments used by Northern Trust to manage risk are formally designated and qualify for hedge accounting as fair value, cash flow, or net investment hedges.

Derivatives designated as fair value hedges are used to limit Northern Trust’s exposure to changes in the fair value of assets and liabilities due to movements in interest rates. Changes in the fair value of the derivative instrument and changes in the fair value of the hedged asset or liability attributable to the hedged risk are recognized currently in Interest Income or Interest Expense on the consolidated statements of income. For substantially all fair value hedges, Northern Trust applies the “shortcut” method of accounting, available under GAAP. As a result, changes recorded in the fair value of the hedged item are assumed to equal the offsetting gain or loss on the derivative. For fair value hedges that do not qualify for the “shortcut” method of accounting, Northern Trust utilizes regression analysis in assessing whether these hedging relationships are highly effective at inception and quarterly thereafter.

Derivatives designated as cash flow hedges are used to minimize the variability in cash flows of earning assets or forecasted transactions caused by movements in interest or foreign exchange rates. Changes in the fair value of such derivatives are recognized in AOCI, a component of stockholders’ equity, and there is no change to the accounting for the hedged item. Balances in AOCI are reclassified to earnings when the hedged forecasted transaction impacts earnings, and are reflected in the same income statement line item. Northern Trust applies the “shortcut” method of accounting for cash flow hedges of certain available for sale investment securities. For cash flow hedges of certain other available for sale investment securities, foreign currency denominated investment securities, and forecasted foreign currency denominated revenue and expenditure transactions, Northern Trust closely matches all terms of the hedged item and hedging derivative at inception and on an ongoing basis. For cash flow hedges of available for sale investment securities, to the extent all terms are not perfectly matched, effectiveness is assessed using regression analysis. For cash flow hedges of forecasted foreign currency denominated revenue and expenditure transactions and investment securities, to the extent all terms are not perfectly matched, effectiveness is assessed using the dollar-offset method.

Foreign exchange contracts and qualifying non-derivative instruments designated as net investment hedges are used to minimize Northern Trust's exposure to variability in the foreign currency translation of net investments in non-U.S. branches and subsidiaries. Changes in the fair value of the hedging instrument are recognized in AOCI consistent with the related translation gains and losses of the hedged net investment. For net investment hedges, all critical terms of the hedged item and the hedging instrument are matched at inception and on an ongoing basis. Amounts recorded in AOCI are reclassified to earnings only upon the sale or liquidation of an investment in a non-U.S. branch or subsidiary.

Fair value, cash flow, and net investment hedges are designated and formally documented as such contemporaneous with the transaction. The formal documentation describes the hedge relationship and identifies the hedging instruments and hedged items. Included in the documentation is a discussion of the risk management objectives and strategies for undertaking such hedges, the nature of the risk being hedged, and a description of the method for assessing hedge effectiveness at inception and on an ongoing basis. For hedges that do not qualify for the "shortcut" or the critical terms match methods of accounting, a formal assessment is performed on a calendar quarter basis to verify that derivatives used in hedging transactions continue to be highly effective in offsetting the changes in fair value or cash flows of the hedged item. Hedge accounting is discontinued if a derivative ceases to be highly effective, matures, is terminated or sold, if a hedged forecasted transaction is no longer expected to occur, or if Northern Trust removes the derivative's hedge designation. Subsequent gains and losses on these derivatives are included in Foreign Exchange Trading Income or Security Commissions and Trading Income on the consolidated statements of income. For discontinued cash flow hedges, the accumulated gain or loss on the derivative remains in AOCI and is reclassified to earnings in the period in which the previously hedged forecasted transaction impacts earnings or is no longer probable of occurring. For discontinued fair value hedges, the previously hedged asset or liability ceases to be adjusted for changes in its fair value. Previous adjustments to the hedged item are amortized over the remaining life of the hedged item.

H. Loans and Leases. Loans and leases are recognized assets that represent a contractual right to receive money either on demand or on fixed or determinable dates. Loans and leases are disaggregated for disclosure purposes by portfolio segment (segment) and by class. Northern Trust has defined its segments as commercial and personal. A class of loans and leases is a subset of a segment, the components of which have similar risk characteristics, measurement attributes, or risk monitoring methods. The classes within the commercial segment have been defined as commercial and institutional, commercial real estate, lease financing, net, non-U.S. and other. The classes within the personal segment have been defined as residential real estate, private client and other.

Loan Classification. Loans that are held for investment are reported at the principal amount outstanding, net of unearned income. Loans classified as held for sale are reported at the lower of cost or fair value. Undrawn commitments relating to loans that are not held for sale are recorded in Other Liabilities and are carried at the amount of unamortized fees with an allowance for credit loss liability recognized for any estimated expected losses.

Nonaccrual Loans and Recognition of Income. Interest income on loans and leases is recorded on an accrual basis unless, in the opinion of management, there is a question as to the ability of the debtor to meet the terms of the loan agreement, or interest or principal is more than 90 days contractually past due and the loan is not well-secured and in the process of collection. Loans meeting such criteria are classified as nonaccrual and interest income is recorded on a cash basis. Past due status is based on how long since the contractual due date a principal or interest payment has been past due. For disclosure purposes, loans that are 29 days past due or less are reported as current. At the time a loan is determined to be nonaccrual, interest accrued but not collected is reversed against interest income in the current period. Interest collected on nonaccrual loans is applied to principal unless, in the opinion of management, collectability of principal is not in doubt. Management's assessment of indicators of loan and lease collectability, and its policies relative to the recognition of interest income, including the suspension and subsequent resumption of income recognition, do not meaningfully vary between loan and lease classes. Nonaccrual loans are returned to performing status when factors indicating doubtful collectability no longer exist. Factors considered in returning a loan to performing status are consistent across all classes of loans and leases and, in accordance with regulatory guidance, relate primarily to expected payment performance. A loan is eligible to be returned to performing status when: (i) no principal or interest that is due is unpaid and repayment of the remaining contractual principal and interest is expected or (ii) the loan has otherwise become well-secured (possessing realizable value sufficient to discharge the debt, including accrued interest, in full) and is in the process of collection (through action reasonably expected to result in debt repayment or restoration to a current status in the near future). A loan that has not been brought fully current may be restored to performing status provided there has been a sustained period of repayment performance (generally a minimum of six payment periods) by the borrower in accordance with the contractual terms, and Northern Trust is reasonably assured of repayment within a reasonable period of time. Additionally, a loan that has been formally restructured so as to be reasonably assured of repayment and performance according to its modified terms may be returned to accrual status, provided there was a well-documented credit evaluation of the borrower's financial condition and prospects of repayment under the revised terms, and there has been a sustained period of repayment performance (generally a minimum of six payment periods) under the revised terms.

Troubled Debt Restructurings (TDRs). A loan that has been modified as a concession by Northern Trust or a bankruptcy court resulting from the debtor's financial difficulties is referred to as a troubled debt restructuring (TDR). All TDRs are reported as TDRs starting in the calendar year of their restructuring. In subsequent years, a TDR may cease being reported as a TDR if the loan was modified at a market rate and has performed according to the modified terms for at least six payment periods. A loan that has been modified at a below market rate will return to accrual status if it satisfies the six-payment-period performance requirement.

The expected credit loss is measured based upon the present value of expected future cash flows, discounted at the effective interest rate based on the original contractual rate. If a loan's contractual interest rate varies based on subsequent changes in an independent factor, such as an index or rate, the loan's effective interest rate is calculated based on the factor as it changes over the life of the loan. Northern Trust elected not to project changes in the factor for purposes of estimating expected future cash flows. Further, Northern Trust elected not to adjust the effective interest rate for prepayments. If the loan is collateral dependent, the expected loss is measured based on the fair value of the collateral at the reporting date.

If the loan valuation is less than the recorded value of the loan, either an allowance is established, or a charge-off is recorded, for the difference. Smaller balance (individually less than $1 million) homogeneous loans are collectively evaluated. Northern Trust's accounting policies for material nonaccrual loans is consistent across all classes of loans and leases.

All loans and leases with TDR modifications are evaluated for additional expected credit losses. The nature and extent of further deterioration in credit quality, including a subsequent default, is considered in the determination of an appropriate level of allowance for credit losses.

Collateral Dependent Financial Assets. A financial asset is collateral-dependent when the borrower is experiencing financial difficulty and repayment is expected to be provided substantially through the sale or operation of the collateral. Most of Northern Trust's collateral dependent credit exposure relates to its residential real estate portfolio for which the collateral is usually the underlying real estate property. For collateral dependent financial assets, it is Northern Trust's policy to reserve or charge-off the difference between the amortized cost basis of the loan and the value of the collateral.

Premium, Discounts, Origination Costs and Fees. Premiums and discounts on loans are recognized as an adjustment of yield using the interest method based on the contractual terms of the loan. Certain direct origination costs and fees are netted, deferred and amortized over the life of the related loan as an adjustment to the loan's yield.

Direct Financing and Leveraged Leases. Unearned lease income from direct financing and leveraged leases is recognized using the interest method. This method provides a constant rate of return on the unrecovered investment over the life of the lease. The rate of return and the allocation of income over the lease term are recalculated from the inception of the lease if during the lease term assumptions regarding the amount or timing of estimated cash flows change. Lease residual values are established at the inception of the lease based on in-house valuations and market analyses provided by outside parties.

I. Allowance for Credit Losses.

2020 Allowance for Credit Losses after the Adoption of Accounting Standards Update No. 2016-13

As of December 31, 2020, the allowance for credit losses represents management's best estimate of lifetime expected credit losses related to various portfolios subject to credit risk, off-balance sheet credit exposure, and specific borrower relationships.

Northern Trust measures expected credit losses of financial assets with similar risk characteristics on a collective basis. A financial asset is measured individually if it does not share similar risk characteristics with other financial assets and the related allowance is determined through an individual evaluation.

Management's estimates utilized in establishing an appropriate level of allowance for credit losses are not dependent on any single assumption. In determining an appropriate allowance level, management evaluates numerous variables, many of which are interrelated or dependent on other assumptions and estimates, and takes into consideration past events, current conditions and reasonable and supportable forecasts.

Forecasting and Reversion. Estimating expected lifetime credit losses requires the consideration of the effect of future economic conditions. Northern Trust employs multiple scenarios over a reasonable and supportable period to project future conditions. Management determines the probability weights assigned to each scenario at each quarter-end. Key variables determined to be relevant for projecting credit losses on the portfolios in scope include macroeconomic factors, such as corporate profits, unemployment, and real estate price indices, as well as financial market factors such as equity prices, volatility, and credit spreads. For periods beyond the reasonable and supportable period, Northern Trust reverts to its own historical loss experiences.

Allowance for Loans and Leases. The allowance estimation methodology for the collective assessment is primarily based on internally developed loss data specific to the Northern Trust financial asset portfolio from a historical observation period that includes both expansionary and recessionary periods. The estimation methodology and the related qualitative adjustment framework segregate the loan and lease portfolio into homogeneous segments based on similar risk characteristics or risk monitoring methods.

Northern Trust utilizes a quantitative probability of default/loss given default approach for the calculation of its credit allowance on a collective basis. For each of the different parameters, specific credit models for the individual loan segments were developed. For each segment, the probability of default and the loss given default are applied to the exposure at default for each projected quarter to determine the quantitative component of the allowance. The quantitative allowance is then reviewed within a qualitative adjustment framework, through which management applies judgment by assessing internal risk factors, potential limitations in the quantitative methodology, and environmental factors that are not fully contemplated in the forecast to compute an adjustment to the quantitative allowance for each segment of the loan portfolio.

The allowance related to credit exposure evaluated on an individual basis is determined through an individual evaluation of loans, leases, and lending-related commitments considered impaired that is based on expected future cash flows, the value of collateral, and other factors that may impact the borrower's ability to pay. For impaired loans for which the amount of allowance, if any, is determined based on the value of the underlying real estate collateral, third-party appraisals are typically obtained and utilized by management. These appraisals are generally less than twelve months old and are subject to adjustments to reflect management's judgment as to the realizable value of the collateral.

Northern Trust analyzes its exposure to credit losses from both on-balance sheet and off-balance sheet activity using a consistent methodology for the quantitative framework as well as the qualitative framework.

As of December 31, 2020, for purposes of estimating the allowance for credit losses for undrawn loan commitments and standby letters of credit, the exposure at default includes an estimated drawdown of unused credit based on credit utilization factors, resulting in a proportionate amount of expected credit losses.

Allowance for HTM Securities. Debt securities held to maturity classified as U.S. government, government sponsored agency, and certain securities classified as obligations of states and political subdivisions are considered to be guarantees of the U.S. government or an agency of the U.S. government and therefore an allowance for credit losses is not estimated for such investments as the expected probability of non-payment of the amortized cost basis is zero.

Debt securities held to maturity classified as other asset-backed represent pools of underlying receivables from which the cash flows are used to pay the bonds that vary in seniority. Utilizing a qualitative estimation approach, the allowance for other asset-backed securities is assessed by evaluating underlying pool performance based on delinquency rates and available credit support.

Debt securities held to maturity classified as other relates to investments purchased by Northern Trust to fulfill its obligations under the Community Reinvestment Act (CRA). Northern Trust fulfills its obligations under the CRA by making qualified investments for purposes of supporting institutions and programs that benefit low-to-moderate income communities within Northern Trust's market area. The allowance for CRA investments is assessed using a qualitative estimation approach primarily based on internal historical performance experience and default history of the underlying CRA portfolios to determine a quantitative component of the allowance.

The allowance estimation methodology for all other debt securities held to maturity is developed using a combination of external and internal data. The estimation methodology groups securities with shared characteristics for which the probability of default and the loss given default are applied to the total exposure at default to determine a quantitative component of the allowance.

Allowance for Available for Sale Securities. Securities available for sale impairment reviews are conducted quarterly to identify and evaluate securities that have indications of possible credit losses. A determination as to whether a security's decline in market value is related to credit impairment takes into consideration numerous factors and the relative significance of any single factor can vary by security. Factors Northern Trust considers in determining whether impairment is credit related include, but are not limited to, the severity of the impairment; the cause of the impairment and the financial condition and near-term prospects of the issuer; activity in the market of the issuer, which may indicate adverse credit conditions; Northern Trust's intent regarding the sale of the security as of the balance sheet date; and the likelihood that Northern Trust will not be required to sell the security for a period of time sufficient to allow for the recovery of the security's amortized cost basis. For each security meeting the requirements of Northern Trust's internal screening process, an extensive review is conducted to determine if a credit loss has occurred that is then based on the best estimate of cash flows to be collected from the security, discounted using the security's effective interest rate. If the present value of the expected cash flows is found to be less than the current amortized cost of the security, an allowance for credit losses is generally recorded equal to the difference between the two amounts, limited to the amount the amortized cost basis exceeds the fair value of the security.

Allowance for Other Financial Assets. The allowance for other financial assets consists of the allowance for those other financial assets presented in Cash and Due from Banks, Other Central Bank Deposits, Interest-Bearing Deposits with Banks, Federal Funds Sold, and Other Assets. The Other Assets category includes other miscellaneous credit exposures reported in Other Assets on the consolidated balance sheets. The allowance estimation methodology for other financial assets primarily utilizes a similar approach as used for the debt securities held to maturity portfolio. It consists of a combination of externally and internally developed loss data, adjusted for the appropriate contractual term. Northern Trust's portfolio is composed mostly of institutions within the "1 to 3" internal borrower rating category and expected to exhibit minimal to modest likelihood of loss.

The portion of the allowance assigned to loans and leases, debt securities held to maturity, and other financial assets is presented as a contra asset in Allowance for Credit Losses on the consolidated balance sheets. The portion of the allowance assigned to undrawn loan commitments and standby letters of credit is reported in Other Liabilities on the consolidated balance sheets. The allowance for AFS securities is presented parenthetically with the amortized cost basis of AFS securities on the consolidated balance sheets.

The Provision for Credit Losses on the consolidated statements of income represents the change in the Allowance for Credit Losses on the consolidated balance sheets and is the charge to current period earnings. It represents the amount needed to maintain the Allowance for Credit Losses on the consolidated balance sheets at an appropriate level to absorb lifetime expected credit losses related to financial assets in scope. Actual losses may vary from current estimates and the amount of the Provision for Credit Losses may be either greater than or less than actual net charge-offs.

Contractual Term. Northern Trust estimates expected credit losses over the contractual term of the financial assets adjusted for prepayments, unless prepayments are not relevant to specific portfolios or sub-portfolios. Extension and renewal options are typically not considered since it is not Northern Trust's practice to enter into arrangements where the borrower has the unconditional option to renew, or a conditional extension option whereby the conditions are beyond Northern Trust's control.

Accrued Interest. Northern Trust elected not to measure an allowance for credit losses for accrued interest receivables related to its loan and securities portfolios as its policy is to write-off uncollectible accrued interest receivable balances in a timely manner. Accrued interest is written off by reversing interest income during the quarter the financial asset is moved from an accrual to a nonaccrual status.

2019 Allowance for Credit Losses prior to the Adoption of Accounting Standards Update No. 2016-13

Allowance for Loans and Leases under the Previous "Incurred Loss" Model. As of December 31, 2019, the Allowance for Credit Losses represented management's estimate of probable losses which occurred as of the date of the consolidated financial statements. The loan and lease portfolio and other lending-related credit exposures were regularly reviewed to evaluate the level of the Allowance for Credit Losses. In determining an appropriate allowance level, Northern Trust evaluated the allowance necessary for impaired loans and lending-related commitments and also estimated losses inherent in other lending-related credit exposures. The allowance for credit losses consisted of the following components:

Specific Allowance. A loan was considered to be impaired when, based on existing information and events, management determined that it was probable that Northern Trust would be unable to collect all amounts due according to the contractual terms of the loan agreement. Impaired loans were identified through ongoing credit management and risk rating processes, including the formal review of past due and watch list credits. Payment performance and delinquency status were critical factors in identifying impairment for all loans and leases, particularly those within the residential real estate, private client and personal-other classes. Other key factors considered in identifying impairment of loans and leases within the commercial and institutional, lease financing, net, non-U.S., and commercial-other classes related to the borrower's ability to perform under the terms of the obligation as measured through the assessment of future cash flows, including consideration of collateral value, market value, and other factors. The specific allowance was determined through an individual evaluation of loans and lending-related commitments considered impaired that was based on expected future cash flows, the value of collateral, and other factors that may impact the borrower's ability to pay. For impaired loans where the amount of specific allowance, if any, was determined based on the value of the underlying real estate collateral, third-party appraisals were typically obtained and utilized by management. These appraisals were generally less than twelve months old and were subject to adjustments to reflect management's judgment as to the realizable value of the collateral.

Inherent Allowance. The inherent allowance estimation methodology was based on internally developed loss data specific to the Northern Trust loan and lease portfolio. The estimation methodology and the related qualitative adjustment framework segregated the loan and lease portfolio into homogeneous segments. For each segment, the probability of default and the loss given default were applied to the total exposure at default to determine a quantitative inherent allowance. The quantitative inherent allowance was then reviewed within the qualitative adjustment framework, where management applied judgment by assessing internal risk factors, potential limitations in the quantitative methodology and environmental factors that were not fully contemplated in the quantitative methodology to compute an adjustment to the quantitative inherent allowance for each segment of the loan portfolio.

The results of the inherent allowance estimation methodology were reviewed quarterly by Northern Trust's Loan Loss Reserve Committee, which included representatives from Credit Risk Management, reporting segment management, and Corporate Finance.

Loans, leases, and other extensions of credit deemed uncollectible were charged to the Allowance for Credit Losses. Subsequent recoveries, if any, were credited to the allowance. Northern Trust's policies relative to the charging-off of uncollectible loans and leases were consistent across both loan and lease segments. Determinations as to whether loan balances for which the collectability was in question were charged-off or a specific reserve was established were based on management's assessment as to the level of certainty regarding the amount of loss. The Provision for Credit Losses, which was charged to income, was the amount necessary to adjust the allowance for credit losses to the level determined to be appropriate through the above processes.

As of December 31, 2019, for purposes of estimating the allowance for credit losses for undrawn loan commitments and standby letters of credit, the exposure at default included an estimated drawdown of unused credit based on a credit conversion factor. The proportionate amount of the quantitative methodology calculation after any required adjustment in the qualitative framework resulted in the required allowance for undrawn loan commitments and standby letters of credit as of the reporting date.

The portion of the allowance assigned to loans and leases was reported as a contra asset, directly following loans and leases in the consolidated balance sheets. The portion of the allowance assigned to undrawn loan commitments and standby letters of credit was reported in Other Liabilities on the consolidated balance sheets.

Other-Than-Temporary Impairment (OTTI) related to Securities. As of December 31, 2019, a security was considered to be other-than-temporarily impaired if the present value of cash flows expected to be collected was less than the security's amortized cost basis (the difference being defined as the credit loss) or if the fair value of the security was less than the security's amortized cost basis and the investor intended, or more-likely-than-not would have been required, to sell the security before recovery of the security's amortized cost basis. If OTTI existed, the charge to earnings was limited to the amount of credit loss if the investor did not intend to sell the security, and it was more-likely-than-not that it would not have been required to sell the security, before recovery of the security's amortized cost basis. Any remaining difference between fair value and amortized cost was recognized in AOCI, net of applicable taxes. Otherwise, the entire difference between fair value and amortized cost was charged to earnings.

J. Standby Letters of Credit. Fees on standby letters of credit are recognized in Other Operating Income on the consolidated statements of income using the straight-line method over the lives of the underlying agreements. Northern Trust's recorded other liability for standby letters of credit, reflecting the obligation it has undertaken, is measured as the amount of unamortized fees on these instruments.

K. Buildings and Equipment. Buildings and equipment owned are carried at original cost less accumulated depreciation. The charge for depreciation is computed using the straight-line method based on the following range of lives: buildings – up to 30 years; equipment – 3 to 10 years; and leasehold improvements – the shorter of the lease term or 15 years.

L. Other Real Estate Owned (OREO). OREO is comprised of commercial and residential real estate properties acquired in partial or total satisfaction of loans. OREO assets are carried at the lower of cost or fair value less estimated costs to sell and are recorded in Other Assets on the consolidated balance sheets. Fair value is typically based on third-party appraisals. Appraisals of OREO properties are updated on an annual basis and are subject to adjustments to reflect management's judgment as to the realizable value of the properties. Losses identified during the 90-day period after the acquisition of such properties are charged against the Allowance for Credit Losses assigned to Loans and Leases. Subsequent write-downs that may be required to the carrying value of these assets and gains or losses realized from asset sales are recorded within Other Operating Expense on the consolidated statements of income.

M. Goodwill and Other Intangible Assets. Goodwill is not subject to amortization. Separately identifiable acquired intangible assets with finite lives are amortized over their estimated useful lives, primarily on a straight-line basis. Purchased software, software licenses, and allowable internal costs, including compensation relating to software developed for internal use, are capitalized. Software is amortized using the straight-line method over the estimated useful lives of the assets, generally ranging from 3 to 10 years. Fees paid for the use of software services that do not convey a software license are expensed as incurred.

Goodwill and other intangible assets are reviewed for impairment on an annual basis or more frequently if events or changes in circumstances indicate the carrying amounts may not be recoverable.

N. Trust, Investment and Other Servicing Fees. Trust, investment and other servicing fees are recorded on an accrual basis, over the period in which the service is provided. Fees are primarily a function of the market value of assets custodied, managed and serviced, transaction volumes, and securities lending volume and spreads, as set forth in the underlying client agreement. This revenue recognition involves the use of estimates and assumptions, including components that are calculated based on estimated asset valuations and transaction volumes.

O. Client Security Settlement Receivables. These receivables result from custody client withdrawals from short-term investment funds that settle on the following business day as well as custody client security sales executed under contractual settlement date accounting that have not yet settled. Northern Trust advances cash to the client on the date of either client withdrawal or trade execution and awaits collection from either the short-term investment funds or via the settled trade.

P. Income Taxes. Northern Trust follows an asset and liability approach to account for income taxes. The objective is to recognize the amount of taxes payable or refundable for the current year, and to recognize deferred tax assets and liabilities resulting from temporary differences between the amounts reported in the financial statements and the tax bases of assets and liabilities. The measurement of tax assets and liabilities is based on enacted tax laws and applicable tax rates.

Tax positions taken or expected to be taken on a tax return are evaluated based on their likelihood of being sustained upon examination by tax authorities. Only tax positions that are considered more-likely-than-not to be sustained are recorded on the consolidated financial statements. A valuation allowance is established for deferred tax assets if it is more-likely-than-not that all or a portion will not be realized. Northern Trust recognizes any interest and penalties related to unrecognized tax benefits in the Provision for Income Taxes on the consolidated statements of income.

Q. Cash Flow Statements. Cash and cash equivalents have been defined as “Cash and Due from Banks” on the consolidated balance sheets.

R. Pension and Other Postretirement Benefits. Northern Trust records the funded status of its defined benefit pension and other postretirement plans on the consolidated balance sheets. Funded pension and postretirement benefits are reported in Other Assets and unfunded pension and postretirement benefits are reported in Other Liabilities on the consolidated balance sheets. Plan assets and benefit obligations are measured annually at December 31. Plan assets are determined based on fair value generally representing observable market prices. The projected benefit obligations are determined based on the present value of projected benefit distributions at an assumed discount rate. Pension costs are recognized ratably over the estimated working lifetime of eligible participants.

S. Share-Based Compensation Plans. Northern Trust recognizes as expense the grant-date fair value of stock and stock unit awards and other share-based compensation granted to employees as Compensation on the consolidated statements of income. The fair values of stock and stock unit awards, including performance stock unit awards and director awards, are based on the closing price of the Corporation’s stock on the date of grant adjusted for certain awards that do not accrue dividends while vesting. The fair value of stock options is estimated on the date of grant using the Black-Scholes option pricing model. The model utilizes weighted-average assumptions regarding the period of time that options granted are expected to be outstanding (expected term) based primarily on the historical exercise behavior attributable to previous option grants, the estimated yield from dividends paid on the Corporation’s stock over the expected term of the options, the historical volatility of Northern Trust’s stock price and the implied volatility of traded options on Northern Trust stock, and a risk free interest rate based on the U.S. Treasury yield curve at the time of grant for a period equal to the expected term of the options granted.

Compensation expense for share-based award grants with terms that provide for a graded vesting schedule, whereby portions of the award vest in increments over the requisite service period, are recognized on a straight-line basis over the requisite service period for the entire award. Compensation expense for performance stock unit awards are recognized on a straight-line basis over the requisite service period of the award based on expected achievement of the performance condition. Adjustments are made for employees that meet certain eligibility criteria at the grant date or during the requisite service period.

Northern Trust does not include an estimate of future forfeitures in its recognition of share-based compensation expense. Share-based compensation expense is adjusted based on forfeitures as they occur. Dividend equivalents are paid on a current basis for restricted stock units granted prior to February 21, 2017 that are not yet vested. Dividend equivalents are accrued for performance stock unit awards, most restricted stock units granted on or after February 21, 2017 and director awards not yet vested, and are paid upon vesting. Certain restricted stock units granted on or after February 20, 2018 are not entitled to dividend equivalents during the vesting period. Cash flows resulting from the realization of excess tax benefits are classified as operating cash flows on the consolidated statements of cash flows.

T. Net Income Per Common Share. Basic net income per common share is computed by dividing net income/loss applicable to common stock by the weighted average number of common shares outstanding during each period. Diluted net income per common share is computed by dividing net income applicable to common stock and potential common shares by the aggregate of the weighted average number of common shares outstanding during the period and common share equivalents calculated for stock options outstanding using the treasury stock method. In a period of a net loss, diluted net income per common share is calculated in the same manner as basic net income per common share.

Northern Trust has issued certain restricted stock unit awards, which are unvested share-based payment awards that contain nonforfeitable rights to dividends or dividend equivalents. These units are considered participating securities.

Accordingly, Northern Trust calculates net income applicable to common stock using the two-class method, whereby net income is allocated between common stock and participating securities.

Note 2 – Recent Accounting Pronouncements

On January 1, 2020, Northern Trust adopted Accounting Standards Update (ASU) No. 2016-13, "Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments" (ASU 2016-13). ASU 2016-13 significantly changed the way impairment of financial instruments is recognized by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of financial instruments. The main provisions of ASU 2016-13 include (1) replacing the "incurred loss" approach under current GAAP with an "expected loss" model for instruments measured at amortized cost, (2) requiring entities to record an allowance for available for sale debt securities rather than reduce the carrying amount of the investments, as is required by the other-than-temporary-impairment model under legacy GAAP, and (3) a simplified accounting model for purchased credit-impaired debt securities and loans.

Upon adoption of ASU 2016-13, Northern Trust recorded a $13.7 million increase in the allowance for credit losses with a corresponding cumulative effect adjustment to decrease retained earnings by $10.1 million, net of income taxes, on January 1, 2020. Northern Trust did not restate comparative periods for the effects of applying ASU 2016-13. There was no significant impact to Northern Trust's consolidated statements of income. Please refer to Note 7 — Allowance for Credit Losses for further information.

On January 1, 2020, Northern Trust adopted ASU No. 2017-04, "Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment" (ASU 2017-04). ASU 2017-04 amends the subsequent measurement of goodwill whereby Step 2 from the goodwill impairment test is eliminated. As a result, the goodwill impairment test is performed by comparing the fair value of a reporting unit to its carrying value and an impairment charge should be recognized for the amount by which the carrying amount exceeds the reporting unit's fair value, not to exceed the total amount of goodwill allocated to that reporting unit. Upon adoption of ASU 2017-04, there was no significant impact to Northern Trust's consolidated balance sheets or consolidated statements of income.

On January 1, 2020, Northern Trust adopted ASU No. 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement" (ASU 2018-13). The primary objective of ASU 2018-13 is to improve the effectiveness of disclosures in the notes to financial statements. Upon adoption of ASU 2018-13, there was no significant impact to Northern Trust's consolidated balance sheets or consolidated statements of income.

On January 1, 2020, Northern Trust adopted ASU No. 2018-15, "Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (a consensus of the FASB Emerging Issues Task Force)" (ASU 2018-15). ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal use software license). Upon adoption of ASU 2018-15, there was no significant impact to Northern Trust's consolidated balance sheets or consolidated statements of income.

On January 1, 2020, Northern Trust adopted ASU No. 2018-17, "Consolidation (Topic 810): Targeted Improvements to Related Party Guidance for Variable Interest Entities" (ASU 2018-17). ASU 2018-17 requires that indirect interests held through related parties in common control arrangements be considered on a proportional basis (rather than as the equivalent of a direct interest in its entirety) for determining whether fees paid to decision makers and service providers are variable interests. Upon adoption of ASU 2018-17, there was no significant impact to Northern Trust's consolidated balance sheets or consolidated statements of income.

On April 1, 2020, Northern Trust adopted ASU No. 2020-04, "Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting" (ASU 2020-04). The global transition toward alternative reference rates and away from referencing the London Interbank Offered Rate (LIBOR) and other interbank offered rates (Reference Rate Reform) is expected to have a significant impact on the volume of contract modifications, hedge accounting, and other transactions that reference LIBOR or another reference rate expected to be discontinued because of Reference Rate Reform. ASU 2020-04 provides temporary optional expedients and exceptions for applying GAAP to contract modifications, hedging relationships, and other transactions affected by Reference Rate Reform if certain criteria are met. The main provisions of ASU 2020-04 provide the following optional expedients: (1) simplification of the accounting evaluations under current GAAP for contract modifications, including loan, debt, lease and other contracts with potential embedded derivatives, if qualifying criteria are met (2) preservation of hedging relationships without dedesignation upon certain changes to the critical terms of an existing hedging relationship due to Reference Rate Reform and other optional hedge accounting relief provisions and (3) a one-time election to sell or transfer, or both sell and transfer, debt securities classified as held to maturity that reference a rate affected by Reference Rate Reform and are classified as held to maturity before January 1, 2020.

The optional expedients in ASU 2020-04 for contract modifications and hedging relationships are applied prospectively, while the one-time election to sell or transfer, or both sell and transfer debt securities classified as held to maturity may be made at any time after March 12, 2020. The optional expedients and exceptions provided by ASU 2020-04 do not apply to contract modifications made and hedging relationships entered into or evaluated after December 31, 2022, except for hedging relationships existing as of December 31, 2022 for which an entity has elected certain optional expedients and which are retained through the end of the hedging relationship. Upon adoption of ASU 2020-04, there was no significant impact on Northern Trust's consolidated balance sheets or consolidated statements of income. Northern Trust expects to elect the optional expedients provided in ASU 2020-04 and does not expect a significant impact on Northern Trust's consolidated balance sheets or consolidated statements of income as a result of electing such expedients.

On January 7, 2021, Northern Trust retrospectively adopted ASU No. 2021-01, "Reference Rate Reform (Topic 848): Scope" (ASU 2021-01). ASU 2021-01 clarifies the scope of Topic 848 to explicitly include those derivative instruments affected by changes in interest rates used for margining, discounting, or contract price alignment as eligible for certain optional expedients and exceptions in Topic 848. Upon adoption of ASU 2021-01, Northern Trust elected the expedients provided in Topic 848 with no significant impact on Northern Trust's consolidated balance sheets or consolidated statements of income.

Note 3 – Fair Value Measurements

Fair value under GAAP is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants on the measurement date.

Fair Value Hierarchy. The following describes the hierarchy of valuation inputs (Levels 1, 2, and 3) used to measure fair value and the primary valuation methodologies used by Northern Trust for financial instruments measured at fair value on a recurring basis. Observable inputs reflect market data obtained from sources independent of the reporting entity; unobservable inputs reflect the entity's own assumptions about how market participants would value an asset or liability based on the best information available. GAAP requires an entity measuring fair value to maximize the use of observable inputs and minimize the use of unobservable inputs and establishes a fair value hierarchy of inputs. Financial instruments are categorized within the hierarchy based on the lowest level input that is significant to their valuation. Northern Trust's policy is to recognize transfers into and transfers out of fair value levels as of the end of the reporting period in which the transfer occurred. No transfers into or out of Level 3 occurred during the years ended December 31, 2020, or 2019.

Level 1 – Quoted, active market prices for identical assets or liabilities. Northern Trust's Level 1 assets are comprised of available for sale investments in U.S. Treasury securities.

Level 2 – Observable inputs other than Level 1 prices, such as quoted active market prices for similar assets or liabilities, quoted prices for identical or similar assets in inactive markets, and model-derived valuations in which all significant inputs are observable in active markets. Northern Trust's Level 2 assets include available for sale and trading account debt securities, the fair values of which are determined predominantly by external pricing vendors. Prices received from vendors are compared to other vendor and third-party prices. If a security price obtained from a pricing vendor is determined to exceed pre-determined tolerance levels that are assigned based on an asset type's characteristics, the exception is researched and, if the price is not able to be validated, an alternate pricing vendor is utilized, consistent with Northern Trust's pricing source hierarchy. As of December 31, 2020, Northern Trust's available for sale debt securities portfolio included 2,260 Level 2 securities with an aggregate market value of $39.2 billion. All 2,260 debt securities were valued by external pricing vendors. As of December 31, 2019, Northern Trust's available for sale debt securities portfolio included 1,704 Level 2 debt securities with an aggregate market value of $34.3 billion. All 1,704 debt securities were valued by external pricing vendors. Trading account debt securities, which totaled $0.5 million and $0.3 million as of December 31, 2020 and 2019, respectively were all valued using external pricing vendors.

Northern Trust has established processes and procedures to assess the suitability of valuation methodologies used by external pricing vendors, including reviews of valuation techniques and assumptions used for selected securities. On a daily basis, periodic quality control reviews of prices received from vendors are conducted which include comparisons to prices on similar security types received from multiple pricing vendors and to the previous day's reported prices for each security. Predetermined tolerance level exceptions are researched and may result in additional validation through available market information or the use of an alternate pricing vendor. Quarterly, Northern Trust reviews documentation from third-party pricing vendors regarding the valuation processes and assumptions used in their valuations and assesses whether the fair value levels assigned by Northern Trust to each security classification are appropriate. Annually, valuation inputs used within third-party pricing vendor valuations are reviewed for propriety on a sample basis through a comparison of inputs used to comparable market data, including security classifications that are less actively traded and security classifications comprising significant portions of the portfolio.

Level 2 assets and liabilities also include derivative contracts which are valued internally using widely accepted income-based models that incorporate inputs readily observable in actively quoted markets and reflect the contractual terms of the contracts. Observable inputs include foreign exchange rates and interest rates for foreign exchange contracts; credit spreads, default probabilities, and recovery rates for credit default swap contracts; interest rates for interest rate swap contracts and forward contracts; and interest rates and volatility inputs for interest rate option contracts. Northern Trust evaluates the impact of counterparty credit risk and its own credit risk on the valuation of its derivative instruments. Factors considered include the likelihood of default by Northern Trust and its counterparties, the remaining maturities of the instruments, net exposures after giving effect to master netting arrangements or similar agreements, available collateral, and other credit enhancements in determining the appropriate fair value of derivative instruments. The resulting valuation adjustments have not been considered material.

Level 3 – Valuation techniques in which one or more significant inputs are unobservable in the marketplace.

Northern Trust's Level 3 liabilities consist of swaps that Northern Trust entered into with the purchaser of 1.1 million and 1.0 million shares of Visa Inc. Class B common stock (Visa Class B common shares) previously held by Northern Trust and sold in June 2016 and 2015, respectively. Pursuant to the swaps, Northern Trust retains the risks associated with the ultimate conversion of the Visa Class B common shares into shares of Visa Inc. Class A common stock (Visa Class A common shares), such that the counterparty will be compensated for any dilutive adjustments to the conversion ratio and Northern Trust will be compensated for any anti-dilutive adjustments to the ratio. The swaps also require periodic payments from Northern Trust to the counterparty calculated by reference to the market price of Visa Class A common shares and a fixed rate of interest. The fair value of the swaps is determined using a discounted cash flow methodology. The significant unobservable inputs used in the fair value measurement are Northern Trust's own assumptions about estimated changes in the conversion rate of the Visa Class B common shares into Visa Class A common shares, the date on which such conversion is expected to occur and the estimated growth rate of the Visa Class A common share price. See "Visa Class B Common Shares" under Note 26, "Commitments and Contingent Liabilities," for further information.

Northern Trust believes its valuation methods for its assets and liabilities carried at fair value are appropriate; however, the use of different methodologies or assumptions, particularly as applied to Level 3 assets and liabilities, could have a material effect on the computation of their estimated fair values.

Management of various businesses and departments of Northern Trust (including Corporate Market Risk, Credit Risk Management, Corporate Finance, C&IS and Wealth Management) reviews valuation methods and models for Level 3 assets and liabilities. Fair value measurements are performed upon acquisitions of an asset or liability. Management of the appropriate business or department reviews assumed inputs, especially when unobservable in the marketplace, in order to substantiate their use in each fair value measurement. When appropriate, management reviews forecasts used in the valuation process in light of other relevant financial projections to understand any variances between current and previous fair value measurements. In certain circumstances, third party information is used to support the fair value measurements. If certain third party information seems inconsistent with consensus views, a review of the information is performed by management of the respective business or department to determine the appropriate fair value of the asset or liability.

The following table presents the fair values of Northern Trust's Level 3 liabilities as of December 31, 2020 and 2019, as well as the valuation techniques, significant unobservable inputs, and quantitative information used to develop significant unobservable inputs for such liabilities as of such dates.

TABLE 55: LEVEL 3 SIGNIFICANT UNOBSERVABLE INPUTS

DECEMBER 31, 2020					
FINANCIAL INSTRUMENT	FAIR VALUE	VALUATION TECHNIQUE	UNOBSERVABLE INPUTS	INPUT VALUES	WEIGHTED-AVERAGE INPUT VALUES[1]
Swaps Related to Sale of Certain Visa Class B Common Shares	**$35.3 million**	**Discounted Cash Flow**	**Conversion Rate**	**1.62x**	**1.62x**
			Visa Class A Appreciation	**8.73%**	**8.73%**
			Expected Duration	**12 - 33 months**	**20 months**

[1] *Weighted average of expected duration based on scenario probability.*

DECEMBER 31, 2019					
FINANCIAL INSTRUMENT	FAIR VALUE	VALUATION TECHNIQUE	UNOBSERVABLE INPUTS	INPUT VALUES	WEIGHTED-AVERAGE INPUT VALUES[1]
Swaps Related to Sale of Certain Visa Class B Common Shares	$33.4 million	Discounted Cash Flow	Conversion Rate	1.62x	1.62x
			Visa Class A Appreciation	8.54%	8.54%
			Expected Duration	12 - 36 months	22 months

[1] *Weighted average of expected duration based on scenario probability.*

The following presents assets and liabilities measured at fair value on a recurring basis as of December 31, 2020 and 2019, segregated by fair value hierarchy level.

TABLE 56: RECURRING BASIS HIERARCHY LEVELING

	DECEMBER 31, 2020				
(In Millions)	LEVEL 1	LEVEL 2	LEVEL 3	NETTING	ASSETS/ LIABILITIES AT FAIR VALUE
Debt Securities					
Available for Sale					
U.S. Government	$ **2,799.9**	$ **—**	$ **—**	$ **—**	$ **2,799.9**
Obligations of States and Political Subdivisions	**—**	**3,083.6**	**—**	**—**	**3,083.6**
Government Sponsored Agency	**—**	**24,956.7**	**—**	**—**	**24,956.7**
Non-U.S. Government	**—**	**714.0**	**—**	**—**	**714.0**
Corporate Debt	**—**	**2,539.6**	**—**	**—**	**2,539.6**
Covered Bonds	**—**	**553.1**	**—**	**—**	**553.1**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**—**	**2,345.8**	**—**	**—**	**2,345.8**
Other Asset-Backed	**—**	**3,997.5**	**—**	**—**	**3,997.5**
Commercial Mortgage-Backed	**—**	**1,031.8**	**—**	**—**	**1,031.8**
Total Available for Sale	**2,799.9**	**39,222.1**	**—**	**—**	**42,022.0**
Trading Account	**—**	**0.5**	**—**	**—**	**0.5**
Total Available for Sale and Trading Debt Securities	**2,799.9**	**39,222.6**	**—**	**—**	**42,022.5**
Other Assets					
Derivative Assets					
Foreign Exchange Contracts	**—**	**4,260.7**	**—**	**(3,505.3)**	**755.4**
Interest Rate Contracts	**—**	**297.5**	**—**	**(2.5)**	**295.0**
Total Derivative Assets	**—**	**4,558.2**	**—**	**(3,507.8)**	**1,050.4**
Other Liabilities					
Derivative Liabilities					
Foreign Exchange Contracts	**—**	**4,722.5**	**—**	**(2,718.6)**	**2,003.9**
Interest Rate Contracts	**—**	**125.0**	**—**	**(98.5)**	**26.5**
Other Financial Derivatives[1]	**—**	**—**	**35.3**	**—**	**35.3**
Total Derivative Liabilities	$ **—**	$ **4,847.5**	$ **35.3**	$ **(2,817.1)**	$ **2,065.7**

Note: Northern Trust has elected to net derivative assets and liabilities when legally enforceable master netting arrangements or similar agreements exist between Northern Trust and the counterparty. As of December 31, 2020, derivative assets and liabilities shown above also include reductions of $1,867.8 million and $1,177.2 million, respectively, as a result of cash collateral received from and deposited with derivative counterparties.

[1] *This line consists of swaps related to the sale of certain Visa Class B common shares.*

(In Millions)	DECEMBER 31, 2019 LEVEL 1	LEVEL 2	LEVEL 3	NETTING	ASSETS/ LIABILITIES AT FAIR VALUE
Debt Securities					
Available for Sale					
U.S. Government	$ 4,549.1	$ —	$ —	$ —	$ 4,549.1
Obligations of States and Political Subdivisions	—	1,615.3	—	—	1,615.3
Government Sponsored Agency	—	23,271.2	—	—	23,271.2
Non-U.S. Government	—	3.3	—	—	3.3
Corporate Debt	—	2,402.7	—	—	2,402.7
Covered Bonds	—	769.9	—	—	769.9
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	—	2,127.6	—	—	2,127.6
Other Asset-Backed	—	3,330.5	—	—	3,330.5
Commercial Mortgage Backed	—	797.7	—	—	797.7
Other	—	9.0	—	—	9.0
Total Available for Sale	4,549.1	34,327.2	—	—	38,876.3
Trading Account	—	0.3	—	—	0.3
Total Available for Sale and Trading Debt Securities	4,549.1	34,327.5	—	—	38,876.6
Other Assets					
Derivative Assets					
Foreign Exchange Contracts	—	3,234.8	—	(2,334.1)	900.7
Interest Rate Contracts	—	152.9	—	(3.9)	149.0
Total Derivatives Assets	—	3,387.7	—	(2,338.0)	1,049.7
Other Liabilities					
Derivative Liabilities					
Foreign Exchange Contracts	—	3,182.2	—	(1,548.6)	1,633.6
Interest Rate Contracts	—	97.4	—	(57.3)	40.1
Other Financial Derivative[(1)]	—	—	33.4	(12.5)	20.9
Total Derivative Liabilities	$ —	$ 3,279.6	$ 33.4	$ (1,618.4)	$ 1,694.6

Note: Northern Trust has elected to net derivative assets and liabilities when legally enforceable master netting arrangements or similar agreements exist between Northern Trust and the counterparty. As of December 31, 2019, derivative assets and liabilities shown above also include reductions of $1,136.8 million and $417.2 million, respectively, as a result of cash collateral received from and deposited with derivative counterparties.

[(1)] *This line consists of swaps related to the sale of certain Visa Class B common shares.*

The following table presents the changes in Level 3 liabilities for the years ended December 31, 2020 and 2019.

TABLE 57: CHANGES IN LEVEL 3 LIABILITIES

LEVEL 3 LIABILITIES (In Millions)	SWAPS RELATED TO SALE OF CERTAIN VISA CLASS B COMMON SHARES **2020**	2019
Fair Value at January 1	**$ 33.4**	$ 32.8
Total (Gains) Losses:		
Included in Earnings[(1)]	**18.3**	17.1
Purchases, Issues, Sales, and Settlements		
Settlements	**(16.4)**	(16.5)
Fair Value at December 31	**$ 35.3**	$ 33.4
Unrealized Losses (Gains) Included in Earnings Related to Financial Instruments Held at December 31[(1)]	**$ 18.6**	$ 12.3

[(1)] *Gains (losses) are recorded in Other Operating Income on the consolidated statements of income.*

Carrying values of assets and liabilities that are not measured at fair value on a recurring basis may be adjusted to fair value in periods subsequent to their initial recognition, for example, to record an impairment of an asset. GAAP requires entities to separately disclose these subsequent fair value measurements and to classify them under the fair value hierarchy.

Assets measured at fair value on a nonrecurring basis at December 31, 2020 and 2019, all of which were categorized as Level 3 under the fair value hierarchy, were comprised of nonaccrual loans whose values were based on real estate and other available collateral, and of OREO properties.

Fair values of real estate loan collateral were estimated using a market approach typically supported by third-party valuations and property-specific fees and taxes. The fair values of real estate loan collateral were subject to adjustments to reflect management's judgment as to realizable value and consisted of discount factors ranging from 15.0% to 20.0% with a weighted average based on fair values of 16.8% and 15.3% as of December 31, 2020 and December 31, 2019, respectively. Other loan collateral, which typically consists of accounts receivable, inventory and equipment, is valued using a market approach adjusted for asset-specific characteristics and in limited instances third-party valuations are used. OREO assets are carried at the lower of cost or fair value less estimated costs to sell, with fair value typically based on third-party appraisals.

Collateral-based nonaccrual loans that have been adjusted to fair value totaled $24.6 million and $8.0 million at December 31, 2020 and 2019, respectively.

The following table presents the fair values of Northern Trust's Level 3 assets that were measured at fair value on a nonrecurring basis as of December 31, 2020 and 2019, as well as the valuation technique, significant unobservable inputs, and quantitative information used to develop the significant unobservable inputs for such assets as of such dates.

TABLE 58: LEVEL 3 NONRECURRING BASIS SIGNIFICANT UNOBSERVABLE INPUTS

DECEMBER 31, 2020

FINANCIAL INSTRUMENT	FAIR VALUE[1]	VALUATION TECHNIQUE	UNOBSERVABLE INPUTS	INPUT VALUES	WEIGHTED-AVERAGE INPUT VALUES
Loans	**$24.6 million**	**Market Approach**	**Discount factor applied to real estate collateral-based loans to reflect realizable value**	**15.0% – 20.0%**	**16.8%**

[1] Includes real estate collateral-based loans and other collateral-based loans.

DECEMBER 31, 2019

FINANCIAL INSTRUMENT	FAIR VALUE[1]	VALUATION TECHNIQUE	UNOBSERVABLE INPUTS	INPUT VALUES	WEIGHTED-AVERAGE INPUT VALUES
Loans	$8.0 million	Market Approach	Discount factor applied to real estate collateral-based loans to reflect realizable value	15.0% – 20.0%	15.3%

[1] Includes real estate collateral-based loans and other collateral-based loans.

The following tables summarize the fair values of all financial instruments.

TABLE 59: FAIR VALUE OF FINANCIAL INSTRUMENTS

	DECEMBER 31, 2020				
			FAIR VALUE		
(In Millions)	BOOK VALUE	TOTAL FAIR VALUE	LEVEL 1	LEVEL 2	LEVEL 3
ASSETS					
Cash and Due from Banks	$ 4,389.5	$ 4,389.5	$ 4,389.5	$ —	$ —
Federal Reserve and Other Central Bank Deposits	55,503.6	55,503.6	—	55,503.6	—
Interest-Bearing Deposits with Banks	4,372.6	4,372.6	—	4,372.6	—
Securities Purchased under Agreements to Resell	1,596.5	1,596.5	—	1,596.5	—
Debt Securities					
Available for Sale[1]	42,022.0	42,022.0	2,799.9	39,222.1	—
Held to Maturity	17,791.1	17,797.4	90.0	17,707.4	—
Trading Account	0.5	0.5	—	0.5	—
Loans (excluding Leases)					
Held for Investment	33,558.0	34,017.5	—	—	34,017.5
Client Security Settlement Receivables	1,160.2	1,160.2	—	1,160.2	—
Other Assets					
Federal Reserve and Federal Home Loan Bank Stock	275.0	275.0	—	275.0	—
Community Development Investments	919.6	919.6	—	919.6	—
Employee Benefit and Deferred Compensation	215.8	228.9	138.6	90.3	—
LIABILITIES					
Deposits					
Demand, Noninterest-Bearing, Savings, Money Market and Other Interest-Bearing	$ 71,742.5	$ 71,742.5	$ 71,742.5	$ —	$ —
Savings Certificates and Other Time	937.1	943.0	—	943.0	—
Non U.S. Offices Interest-Bearing	71,198.4	71,198.4	—	71,198.4	—
Federal Funds Purchased	260.2	260.2	—	260.2	—
Securities Sold Under Agreements to Repurchase	39.8	39.8	—	39.8	—
Other Borrowings	4,011.5	4,012.7	—	4,012.7	—
Senior Notes	3,122.4	3,222.6	—	3,222.6	—
Long-Term Debt					
Subordinated Debt	1,189.3	1,250.1	—	1,250.1	—
Floating Rate Capital Debt	277.8	264.6	—	264.6	—
Other Liabilities					
Standby Letters of Credit	22.4	22.4	—	—	22.4
Loan Commitments	77.0	77.0	—	—	77.0
DERIVATIVE INSTRUMENTS					
Asset/Liability Management					
Foreign Exchange Contracts					
Assets	$ 15.6	$ 15.6	$ —	$ 15.6	$ —
Liabilities	311.8	311.8	—	311.8	—
Interest Rate Contracts					
Assets	8.3	8.3	—	8.3	—
Liabilities	10.2	10.2	—	10.2	—
Other Financial Derivatives					
Liabilities[2]	35.3	35.3	—	—	35.3
Client-Related and Trading					
Foreign Exchange Contracts					
Assets	4,245.1	4,245.1	—	4,245.1	—
Liabilities	4,410.7	4,410.7	—	4,410.7	—
Interest Rate Contracts					
Assets	289.2	289.2	—	289.2	—
Liabilities	114.8	114.8	—	114.8	—

(1) *Refer to the table located on page 105 for the disaggregation of available for sale debt securities.*
(2) *This line consists of swaps related to the sale of certain Visa Class B common shares.*

	DECEMBER 31, 2019				
			FAIR VALUE		
(In Millions)	BOOK VALUE	TOTAL FAIR VALUE	LEVEL 1	LEVEL 2	LEVEL 3
ASSETS					
Cash and Due from Banks	$ 4,459.2	$ 4,459.2	$ 4,459.2	$ —	$ —
Federal Reserve and Other Central Bank Deposits	33,886.0	33,886.0	—	33,886.0	—
Interest-Bearing Deposits with Banks	4,877.1	4,877.1	—	4,877.1	—
Federal Funds Sold	5.0	5.0	—	5.0	—
Securities Purchased under Agreements to Resell	707.8	707.8	—	707.8	—
Debt Securities					
Available for Sale[(1)]	38,876.3	38,876.3	4,549.1	34,327.2	—
Held to Maturity	12,284.5	12,249.3	138.8	12,110.5	—
Trading Account	0.3	0.3	—	0.3	—
Loans (excluding Leases)					
Held for Investment	31,239.5	31,517.8	—	—	31,517.8
Client Security Settlement Receivables	845.7	845.7	—	845.7	—
Other Assets					
Federal Reserve and Federal Home Loan Bank Stock	301.2	301.2	—	301.2	—
Community Development Investments	749.3	749.3	—	749.3	—
Employee Benefit and Deferred Compensation	199.5	207.6	131.0	76.6	—
LIABILITIES					
Deposits					
Demand, Noninterest-Bearing, Savings, Money Market and Other Interest-Bearing	$ 47,733.6	$ 47,733.6	$ 47,733.6	$ —	$ —
Savings Certificates and Other Time	986.7	994.2	—	994.2	—
Non U.S. Offices Interest-Bearing	60,400.3	60,400.3	—	60,400.3	—
Federal Funds Purchased	552.9	552.9	—	552.9	—
Securities Sold Under Agreements to Repurchase	489.7	489.7	—	489.7	—
Other Borrowings	6,744.8	6,745.9	—	6,745.9	—
Senior Notes	2,573.0	2,593.0	—	2,593.0	—
Long-Term Debt					
Subordinated Debt	1,148.1	1,169.5	—	1,169.5	—
Floating Rate Capital Debt	277.7	262.1	—	262.1	—
Other Liabilities					
Standby Letters of Credit	25.5	25.5	—	—	25.5
Loan Commitments	32.3	32.3	—	—	32.3
DERIVATIVE INSTRUMENTS					
Asset/Liability Management					
Foreign Exchange Contracts					
Assets	$ 83.1	$ 83.1	$ —	$ 83.1	$ —
Liabilities	24.1	24.1	—	24.1	—
Interest Rate Contracts					
Assets	20.5	20.5	—	20.5	—
Liabilities	21.1	21.1	—	21.1	—
Other Financial Derivatives					
Liabilities[(2)]	33.4	33.4	—	—	33.4
Client-Related and Trading					
Foreign Exchange Contracts					
Assets	3,151.7	3,151.7	—	3,151.7	—
Liabilities	3,158.1	3,158.1	—	3,158.1	—
Interest Rate Contracts					
Assets	132.4	132.4	—	132.4	—
Liabilities	76.3	76.3	—	76.3	—

[(1)] *Refer to the table located on page 106 for the disaggregation of available for sale debt securities.*
[(3)] *This line consists of swaps related to the sale of certain Visa Class B common shares.*

Note 4 – Securities

Debt Securities Available for Sale. The following tables provide the amortized cost, fair values, and remaining maturities of debt securities available for sale.

TABLE 60: RECONCILIATION OF AMORTIZED COST TO FAIR VALUE OF DEBT SECURITIES AVAILABLE FOR SALE

	DECEMBER 31, 2020			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	$ **2,728.8**	$ **71.1**	$ **—**	$ **2,799.9**
Obligations of States and Political Subdivisions	**2,927.8**	**155.9**	**0.1**	**3,083.6**
Government Sponsored Agency	**24,595.1**	**388.5**	**26.9**	**24,956.7**
Non-U.S. Government	**713.6**	**1.1**	**0.7**	**714.0**
Corporate Debt	**2,459.9**	**79.8**	**0.1**	**2,539.6**
Covered Bonds	**543.1**	**10.0**	**—**	**553.1**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**2,281.7**	**64.7**	**0.6**	**2,345.8**
Other Asset-Backed	**3,953.5**	**46.8**	**2.8**	**3,997.5**
Commercial Mortgage-Backed	**952.2**	**79.7**	**0.1**	**1,031.8**
Total	$ **41,155.7**	$ **897.6**	$ **31.3**	$ **42,022.0**

	DECEMBER 31, 2019			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	$ 4,527.5	$ 26.7	$ 5.1	$ 4,549.1
Obligations of States and Political Subdivisions	1,604.0	24.6	13.3	1,615.3
Government Sponsored Agency	23,247.5	101.8	78.1	23,271.2
Non-U.S. Government	3.3	—	—	3.3
Corporate Debt	2,378.9	27.8	4.0	2,402.7
Covered Bonds	766.3	4.4	0.8	769.9
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	2,091.3	37.4	1.1	2,127.6
Other Asset-Backed	3,324.5	11.3	5.3	3,330.5
Commercial Mortgage-Backed	769.9	28.7	0.9	797.7
Other	9.0	—	—	9.0
Total	$ 38,722.2	$ 262.7	$ 108.6	$ 38,876.3

TABLE 61: REMAINING MATURITY OF DEBT SECURITIES AVAILABLE FOR SALE

DECEMBER 31, 2020	ONE YEAR OR LESS		ONE TO FIVE YEARS		FIVE TO TEN YEARS		OVER TEN YEARS		TOTAL	
(In Millions)	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value
U.S. Government	$ **300.9**	$ **303.2**	$ **1,732.8**	$ **1,767.0**	$ **695.1**	$ **729.7**	$ **—**	$ **—**	$ **2,728.8**	$ **2,799.9**
Obligations of States and Political Subdivisions	**7.9**	**8.0**	**252.1**	**266.8**	**2,578.4**	**2,718.4**	**89.4**	**90.4**	**2,927.8**	**3,083.6**
Government Sponsored Agency	**5,540.0**	**5,613.6**	**8,942.2**	**9,063.0**	**7,682.1**	**7,793.6**	**2,430.8**	**2,486.5**	**24,595.1**	**24,956.7**
Non-U.S. Government	**414.3**	**414.6**	**40.6**	**40.8**	**258.7**	**258.6**	**—**	**—**	**713.6**	**714.0**
Corporate Debt	**443.5**	**448.6**	**2,016.4**	**2,091.0**	**—**	**—**	**—**	**—**	**2,459.9**	**2,539.6**
Covered Bonds	**108.2**	**108.6**	**434.9**	**444.5**	**—**	**—**	**—**	**—**	**543.1**	**553.1**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**163.9**	**164.1**	**1,960.8**	**2,024.0**	**157.0**	**157.7**	**—**	**—**	**2,281.7**	**2,345.8**
Other Asset-Backed	**517.4**	**525.9**	**2,903.1**	**2,937.8**	**436.0**	**436.8**	**97.0**	**97.0**	**3,953.5**	**3,997.5**
Commercial Mortgage-Backed	**12.0**	**12.1**	**413.5**	**441.2**	**526.7**	**578.5**	**—**	**—**	**952.2**	**1,031.8**
Total	$ **7,508.1**	$ **7,598.7**	$ **18,696.4**	$ **19,076.1**	$ **12,334.0**	$ **12,673.3**	$ **2,617.2**	$ **2,673.9**	$ **41,155.7**	$ **42,022.0**

Note: Mortgage-backed and asset-backed securities are included in the above table taking into account anticipated future prepayments.

Debt Securities Available for Sale with Unrealized Losses. The following table provides information regarding debt securities available for sale with no credit losses reported that had been in a continuous unrealized loss position for less than twelve months and for twelve months or longer as of December 31, 2020 and 2019.

TABLE 62: DEBT SECURITIES AVAILABLE FOR SALE IN UNREALIZED LOSS POSITION WITH NO CREDIT LOSSES REPORTED

AS OF DECEMBER 31, 2020	**LESS THAN 12 MONTHS**		**12 MONTHS OR LONGER**		**TOTAL**	
(In Millions)	**FAIR VALUE**	**UNREALIZED LOSSES**	**FAIR VALUE**	**UNREALIZED LOSSES**	**FAIR VALUE**	**UNREALIZED LOSSES**
Obligations of States and Political Subdivisions	**$ 52.3**	**$ 0.1**	**$ —**	**$ —**	**$ 52.3**	**$ 0.1**
Government Sponsored Agency	**2,402.3**	**13.6**	**2,528.7**	**13.3**	**4,931.0**	**26.9**
Non-U.S. Government	**90.5**	**0.7**	**—**	**—**	**90.5**	**0.7**
Corporate Debt	**66.6**	**0.1**	**—**	**—**	**66.6**	**0.1**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**162.8**	**0.5**	**49.9**	**0.1**	**212.7**	**0.6**
Other Asset-Backed	**176.8**	**0.2**	**792.3**	**2.6**	**969.1**	**2.8**
Commercial Mortgage-Backed	**44.4**	**0.1**	**—**	**—**	**44.4**	**0.1**
Total	**$ 2,995.7**	**$ 15.3**	**$ 3,370.9**	**$ 16.0**	**$ 6,366.6**	**$ 31.3**

AS OF DECEMBER 31, 2019	LESS THAN 12 MONTHS		12 MONTHS OR LONGER		TOTAL	
(In Millions)	FAIR VALUE	UNREALIZED LOSSES	FAIR VALUE	UNREALIZED LOSSES	FAIR VALUE	UNREALIZED LOSSES
U.S. Government	$ 252.2	$ 2.8	$ 899.7	$ 2.3	$ 1,151.9	$ 5.1
Obligations of States and Political Subdivisions	902.4	13.3	—	—	902.4	13.3
Government Sponsored Agency	5,405.0	35.6	7,818.4	42.5	13,223.4	78.1
Corporate Debt	279.3	1.1	492.7	2.9	772.0	4.0
Covered Bonds	138.7	0.7	25.0	0.1	163.7	0.8
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	217.5	1.0	155.2	0.1	372.7	1.1
Other Asset-Backed	592.4	1.8	1,164.9	3.5	1,757.3	5.3
Commercial Mortgage-Backed	62.8	0.7	59.3	0.2	122.1	0.9
Total	$ 7,850.3	$ 57.0	$ 10,615.2	$ 51.6	$ 18,465.5	$ 108.6

As of December 31, 2020, 412 debt securities available for sale with a combined fair value of $6.4 billion were in an unrealized loss position, with their unrealized losses totaling $31.3 million. Unrealized losses related to debt securities available for sale of $26.9 million and $2.8 million related to government sponsored agency and other asset-backed securities, respectively, are primarily attributable to changes in market interest rates and credit spreads since their purchase. As of December 31, 2020, 16% of the corporate debt securities available for sale portfolio were backed by guarantees provided by U.S. and non-U.S. governmental entities. The remaining unrealized losses on Northern Trust’s debt securities available for sale portfolio as of December 31, 2020 are attributable to changes in overall market interest rates or credit spreads.

As of December 31, 2020, Northern Trust did not intend to sell any debt securities available for sale in an unrealized loss position and it was more likely than not that Northern Trust would not be required to sell any such investment before the recovery of its amortized cost basis, which may be maturity.

There was no provision for corporate debt securities available for sale for the year ended December 31, 2020 and no allowance for credit losses for corporate debt securities available for sale as of December 31, 2020.

Debt Securities Held to Maturity. The following tables provide the amortized cost, fair values and remaining maturities of debt securities held to maturity.

TABLE 63: RECONCILIATION OF AMORTIZED COST TO FAIR VALUES OF DEBT SECURITIES HELD TO MATURITY

	DECEMBER 31, 2020			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	**$ 90.0**	**$ —**	**$ —**	**$ 90.0**
Obligations of States and Political Subdivisions	**2.1**	**0.1**	**—**	**2.2**
Government Sponsored Agency	**3.0**	**0.3**	**—**	**3.3**
Non-U.S. Government	**8,336.6**	**7.3**	**0.2**	**8,343.7**
Corporate Debt	**588.0**	**6.5**	**0.1**	**594.4**
Covered Bonds	**3,184.6**	**24.6**	**0.3**	**3,208.9**
Certificates of Deposit	**807.2**	**—**	**—**	**807.2**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**3,648.0**	**43.5**	**0.9**	**3,690.6**
Other Asset-Backed	**677.0**	**0.9**	**—**	**677.9**
Other	**454.6**	**1.1**	**76.5**	**379.2**
Total	**$ 17,791.1**	**$ 84.3**	**$ 78.0**	**$ 17,797.4**

	DECEMBER 31, 2019			
(In Millions)	AMORTIZED COST	GROSS UNREALIZED GAINS	GROSS UNREALIZED LOSSES	FAIR VALUE
U.S. Government	$ 138.8	$ —	$ —	$ 138.8
Obligations of States and Political Subdivisions	10.1	0.2	—	10.3
Government Sponsored Agency	4.1	0.2	—	4.3
Non-U.S. Government	4,076.0	5.3	2.5	4,078.8
Corporate Debt	405.1	1.4	0.3	406.2
Covered Bonds	3,006.7	16.1	2.4	3,020.4
Certificates of Deposit	262.9	—	—	262.9
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	3,285.4	21.7	2.1	3,305.0
Other Asset-Backed	804.3	0.7	0.3	804.7
Other	291.1	0.1	73.3	217.9
Total	$ 12,284.5	$ 45.7	$ 80.9	$ 12,249.3

As of December 31, 2020, the $17.8 billion debt securities held to maturity portfolio had an unrealized loss of $76.5 million related to other residential mortgage-backed securities, which are primarily attributable to changes in overall market interest rates and credit spreads since their purchase.

TABLE 64: REMAINING MATURITY OF DEBT SECURITIES HELD TO MATURITY

DECEMBER 31, 2020	ONE YEAR OR LESS		ONE TO FIVE YEARS		FIVE TO TEN YEARS		OVER TEN YEARS		TOTAL	
(In Millions)	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value
U.S. Government	**$ 90.0**	**$ 90.0**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ —**	**$ 90.0**	**$ 90.0**
Obligations of States and Political Subdivisions	**1.4**	**1.4**	**0.7**	**0.8**	**—**	**—**	**—**	**—**	**2.1**	**2.2**
Government Sponsored Agency	**0.5**	**0.5**	**1.3**	**1.4**	**0.8**	**0.9**	**0.4**	**0.5**	**3.0**	**3.3**
Non-U.S. Government	**8,065.4**	**8,065.5**	**271.2**	**278.2**	**—**	**—**	**—**	**—**	**8,336.6**	**8,343.7**
Corporate Debt	**126.2**	**126.3**	**461.8**	**468.1**	**—**	**—**	**—**	**—**	**588.0**	**594.4**
Covered Bonds	**1,283.7**	**1,289.5**	**1,836.3**	**1,854.7**	**64.6**	**64.7**	**—**	**—**	**3,184.6**	**3,208.9**
Certificates of Deposit	**807.2**	**807.2**	**—**	**—**	**—**	**—**	**—**	**—**	**807.2**	**807.2**
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	**943.2**	**947.2**	**2,354.8**	**2,393.4**	**350.0**	**350.0**	**—**	**—**	**3,648.0**	**3,690.6**
Other Asset-Backed	**239.4**	**239.7**	**433.4**	**433.9**	**4.2**	**4.3**	**—**	**—**	**677.0**	**677.9**
Other	**36.6**	**36.0**	**247.7**	**230.3**	**53.7**	**48.2**	**116.6**	**64.7**	**454.6**	**379.2**
Total	**$11,593.6**	**$11,603.3**	**$ 5,607.2**	**$ 5,660.8**	**$ 473.3**	**$ 468.1**	**$ 117.0**	**$ 65.2**	**$17,791.1**	**$17,797.4**

Note: Mortgage-backed and asset-backed securities are included in the above table taking into account anticipated future prepayments.

Debt securities held to maturity consist of securities that management intends to, and Northern Trust has the ability to, hold until maturity. During the year ended December 31, 2020, $301.5 million securities reflected in U.S. government were transferred from available for sale to held to maturity, all of which were transferred in the second quarter of 2020. During the year ended December 31, 2019, $160.8 million securities reflected in covered bonds were transferred from available for sale to held to maturity.

Credit Quality Indicators. The following table provides the amortized cost of debt securities held to maturity by credit rating.

TABLE 65: AMORTIZED COST OF DEBT SECURITIES HELD TO MATURITY BY CREDIT RATING

	AS OF DECEMBER 31, 2020					
(In Millions)	AAA	AA	A	BBB	NOT RATED	TOTAL
U.S. Government	$ 90.0	$ —	$ —	$ —	$ —	$ 90.0
Obligations of States and Political Subdivisions	—	1.0	—	1.1	—	2.1
Government Sponsored Agency	3.0	—	—	—	—	3.0
Non-U.S. Government	319.8	1,337.4	6,630.6	48.8	—	8,336.6
Corporate Debt	3.8	279.1	305.1	—	—	588.0
Covered Bonds	3,184.6	—	—	—	—	3,184.6
Certificates of Deposit	—	—	—	—	807.2	807.2
Sub-Sovereign, Supranational and Non-U.S. Agency Bonds	2,590.9	1,057.1	—	—	—	3,648.0
Other Asset-Backed	677.0	—	—	—	—	677.0
Other	—	—	—	—	454.6	454.6
Total	$ 6,869.1	$ 2,674.6	$ 6,935.7	$ 49.9	$ 1,261.8	$ 17,791.1
Percent of Total	39 %	15 %	39 %	— %	7 %	100 %

Credit quality indicators are metrics that provide information regarding the relative credit risk of debt securities. Northern Trust maintains a high quality debt securities portfolio, with 93% of the held to maturity portfolio at December 31, 2020 comprised of securities rated A or higher. The remaining held to maturity debt securities portfolio was comprised of 7% not rated by Moody's Investors Service, Standard and Poor's, or Fitch Ratings. Securities not explicitly rated were grouped where possible under the credit rating of the issuer of the security.

Investment Security Gains and Losses. Proceeds of $879.9 million, $1.2 billion, and $307.3 million in 2020, 2019, and 2018, respectively, from the sale of debt securities resulted in the following gains and losses shown in the following table.

TABLE 66: INVESTMENT SECURITY GAINS AND LOSSES

	DECEMBER 31,		
(In Millions)	**2020**	2019	2018
Gross Realized Debt Securities Gains	**$ 3.4**	$ 2.4	$ 1.5
Gross Realized Debt Securities Losses	**(3.8)**	(3.5)	(2.0)
Changes in Other-Than-Temporary Impairment Losses[1]	**—**	(0.3)	(0.5)
Net Investment Security (Losses) Gains	**$ (0.4)**	$ (1.4)	$ (1.0)

[1] *Other-than-temporary impairment losses relate to certain Community Reinvestment Act (CRA) eligible held to maturity debt securities.*

Note 5 – Securities Purchased Under Agreements to Resell and Securities Sold Under Agreements to Repurchase

Northern Trust participates in the repurchase agreement market as a relatively low cost alternative for short-term funding. Securities purchased under agreements to resell and securities sold under agreements to repurchase are accounted for as collateralized financings and recorded at the amounts at which the securities were acquired or sold plus accrued interest. To minimize any potential credit risk associated with these transactions, the fair value of the securities purchased or sold is monitored, limits are set on exposure with counterparties, and the financial condition of counterparties is regularly assessed. It is Northern Trust's policy to take possession, either directly or via third-party custodians, of securities purchased under agreements to resell. Securities sold under agreements to repurchase are held by the counterparty until the repurchase.

The following tables summarize information related to Securities Purchased under Agreements to Resell and Securities Sold under Agreements to Repurchase.

TABLE 67: SECURITIES PURCHASED UNDER AGREEMENTS TO RESELL

($ In Millions)	2020	2019
Balance at December 31	**$ 1,596.5**	$ 707.8
Average Balance During the Year	**1,253.1**	835.0
Average Interest Rate Earned During the Year	**0.31 %**	2.10 %
Maximum Month-End Balance During the Year	**$ 2,055.6**	$ 1,290.0

TABLE 68: SECURITIES SOLD UNDER AGREEMENTS TO REPURCHASE

($ In Millions)	2020	2019
Balance at December 31	**$ 39.8**	$ 489.7
Average Balance During the Year	**218.3**	339.0
Average Interest Rate Paid During the Year	**0.47 %**	1.89 %
Maximum Month-End Balance During the Year	**$ 269.8**	$ 489.7

TABLE 69: REPURCHASE AGREEMENTS ACCOUNTED FOR AS SECURED BORROWINGS

	REMAINING CONTRACTUAL MATURITY OF THE AGREEMENTS	
	OVERNIGHT AND CONTINUOUS	
($ In Millions)	**December 31, 2020**	December 31, 2019
U.S. Treasury and Agency Securities	**$ 39.8**	$ 489.7
Total Borrowings	**39.8**	489.7
Gross Amount of Recognized Liabilities for Repurchase Agreements in Note 28	**39.8**	489.7
Amounts related to agreements not included in Note 28	**—**	—

Note 6 – Loans and Leases

Amounts outstanding for Loans and Leases, by segment and class, are shown in the following table. During the first quarter of 2020, the Corporation implemented a change in the classification of certain loans and leases to specific segments to enhance the consistency of its reporting across various regulatory regimes. As a result, the loan and lease balances as of December 31, 2019 below have been adjusted to conform to the presentation for periods ended after such date. The adjustments generally reflect reclassification of loans from the commercial real estate class to commercial and institutional, residential real estate, and private client classes. There was no impact on total Loans and Leases previously reported.

TABLE 70: LOANS AND LEASES

	DECEMBER 31,	
(In Millions)	**2020**	2019
Commercial		
Commercial and Institutional	**$ 10,058.3**	$ 9,091.1
Commercial Real Estate	**3,558.4**	3,104.3
Non-U.S.	**1,345.7**	1,576.3
Lease Financing, net	**11.4**	65.6
Other	**288.2**	164.0
Total Commercial	**15,262.0**	14,001.3
Personal		
Private Client	**11,815.1**	11,071.4
Residential Real Estate	**6,035.7**	6,095.0
Non-U.S.	**597.9**	174.8
Other	**49.0**	67.1
Total Personal	**18,497.7**	17,408.3
Total Loans and Leases	**$ 33,759.7**	$ 31,409.6

Residential real estate loans consist of traditional first lien mortgages and equity credit lines that generally require a loan-to-collateral value ratio of no more than 65% to 80% at inception. Northern Trust's equity credit line products generally have draw periods of up to 10 years and a balloon payment of any outstanding balance is due at maturity. Payments are interest-only with variable interest rates. Northern Trust does not offer equity credit lines that include an option to convert the outstanding balance to an amortizing payment loan. As of December 31, 2020 and 2019, equity credit lines totaled $304.4 million and $448.5 million, respectively, and equity credit lines for which first liens were held by Northern Trust represented 97% and 97%, respectively, of the total equity credit lines as of those dates.

Included within the non-U.S., commercial-other, and personal-other classes are short duration advances, primarily related to the processing of custodied client investments, totaling $1.1 billion at each of December 31, 2020 and 2019. Demand deposit overdrafts reclassified as loan balances totaled $26.4 million and $90.4 million at December 31, 2020 and 2019, respectively.

As of December 31, 2020, there were no loans or leases classified as held for sale. As of December 31, 2019, there were no loans and $53.6 million of leases, respectively, classified as held for sale related to the decision to sell substantially all of the lease portfolio.

The components of the net investment in direct finance and leveraged leases are as follows:

TABLE 71: DIRECT FINANCE AND LEVERAGED LEASES

	DECEMBER 31,	
(In Millions)	**2020**	2019
Direct Finance Leases		
Lease Receivable	**$ —**	$ 1.5
Residual Value	**—**	21.3
Initial Direct Costs	**—**	0.2
Unearned Income	**—**	—
Investment in Direct Finance Leases	**—**	23.0
Leveraged Leases		
Net Rental Receivable	**11.8**	19.1
Residual Value	**—**	33.1
Unearned Income	**(0.4)**	(9.6)
Investment in Leveraged Leases	**11.4**	42.6
Lease Financing, net	**$ 11.4**	$ 65.6

Paycheck Protection Program. In response to the COVID-19 pandemic, Northern Trust became a lender under the Paycheck Protection Program, as amended (PPP), which was created by the Coronavirus Aid, Relief, and Economic Security (CARES) Act and is administered by the U.S. Small Business Administration (SBA). Loans issued under the PPP are funded by Northern Trust directly to participating borrowers. The PPP loans are guaranteed by the SBA and borrowers are eligible to apply for PPP loan forgiveness for up to the full principal amount and accrued interest of the PPP loan.

To the extent a borrower uses PPP loan proceeds to cover eligible costs and has met all other SBA loan forgiveness requirements, the SBA will determine loan forgiveness under the CARES Act and will pay to Northern Trust the eligible PPP loan forgiven amount, which will be credited to the borrower's loan to repay or pay down the PPP loan. The SBA forgiveness portal opened on August 10, 2020 and Northern Trust's vendor portal opened on September 11, 2020 to begin processing the PPP loan forgiveness applications. When Northern Trust submits forgiveness applications to the SBA, the SBA will have at least 90 days to respond as to the approval or denial of such application. 41 PPP loan forgiveness applications went through the forgiveness process as of December 31, 2020, and 36 of those loans, totaling $6.7 million, were fully forgiven by the SBA as of such date.

As of December 31, 2020, Northern Trust had 1,087 outstanding loans totaling $207.1 million under the PPP in its commercial and institutional portfolio with an average loan balance of $0.2 million. For its origination efforts, Northern Trust received approximately $2.6 million in SBA fees, net of service charges, as of December 31, 2020.

Northern Trust accounts for loans originated under the PPP as loan receivables in accordance with Accounting Standards Codification (ASC) 310 and recognizes such loans at the principal amount less the net amount of loan origination fees. PPP loans are reported in Total Loans and Leases on the consolidated balance sheets.

The SBA provides a 100% guarantee on PPP loans covering principal and interest. Northern Trust considers the risk mitigating effects of these guarantees, and accounts for them as a credit enhancement embedded in the contract. As a result, no allowance for credit losses is measured for Northern Trust's exposure under the PPP.

Credit Quality Indicators. Credit quality indicators are statistics, measurements or other metrics that provide information regarding the relative credit risk of loans and leases. Northern Trust utilizes a variety of credit quality indicators to assess the credit risk of loans and leases at the segment, class, and individual credit exposure levels.

As part of its credit process, Northern Trust utilizes an internal borrower risk rating system to support identification, approval, and monitoring of credit risk. Borrower risk ratings are used in credit underwriting and management reporting. Risk ratings are used for ranking the credit risk of borrowers and the probability of their default. Each borrower is rated using one of a number of ratings models, which consider both quantitative and qualitative factors. The ratings models vary among classes of loans and leases in order to capture the unique risk characteristics inherent within each particular type of credit exposure. Provided below are the more significant performance indicator attributes considered within Northern Trust's borrower rating models, by loan and lease class.

- Commercial and Institutional: leverage, profit margin, liquidity, asset size and capital levels;
- Commercial Real Estate: debt service coverage, loan-to-value ratio, leasing status and guarantor support;
- Lease Financing and Commercial-Other: leverage, profit margin, liquidity, asset size and capital levels;
- Non-U.S.: leverage, profit margin, liquidity, return on assets and capital levels;
- Residential Real Estate: payment history, credit bureau scores and loan-to-value ratio;
- Private Client: cash-flow-to-debt and net worth ratios, leverage and liquidity; and
- Personal-Other: cash-flow-to-debt and net worth ratios.

While the criteria vary by model, the objective is for the borrower ratings to be consistent in both the measurement and ranking of risk. Each model is calibrated to a master rating scale to support this consistency. Ratings for borrowers not in default range from “1” for the strongest credits to “7” for the weakest non-defaulted credits. Ratings of “8” or “9” are used for defaulted borrowers. Borrower risk ratings are monitored and are revised when events or circumstances indicate a change is required. Risk ratings are generally validated at least annually.

Loan and lease segment and class balances as of December 31, 2020 are provided in the following table, segregated by borrower ratings into “1 to 3,” “4 to 5” and “6 to 9” (watch list and nonaccrual status) categories by year of origination at amortized cost basis. Loans that are held for investment are reported at the principal amount outstanding, net of unearned income.

TABLE 72: CREDIT QUALITY INDICATOR AT AMORTIZED COST BASIS BY ORIGINATION YEAR

DECEMBER 31, 2020	TERM LOANS AND LEASES						REVOLVING LOANS	REVOLVING LOANS CONVERTED TO TERM LOANS	
(In Millions)	**2020**	2019	2018	2017	2016	PRIOR			**TOTAL**
Commercial									
Commercial and Institutional									
Risk Rating:									
1 to 3 Category	**$ 663.8**	**$ 546.0**	**$ 204.6**	**$ 96.0**	**$ 396.0**	**$ 448.8**	**$ 3,742.4**	**$ 5.5**	**$ 6,103.1**
4 to 5 Category	**793.4**	**505.1**	**354.1**	**405.4**	**134.6**	**167.3**	**1,238.7**	**32.3**	**3,630.9**
6 to 9 Category	**34.3**	**119.8**	**37.3**	**42.8**	**23.0**	**6.0**	**61.1**	**—**	**324.3**
Total Commercial and Institutional	**1,491.5**	**1,170.9**	**596.0**	**544.2**	**553.6**	**622.1**	**5,042.2**	**37.8**	**10,058.3**
Commercial Real Estate									
Risk Rating:									
1 to 3 Category	**406.3**	**109.2**	**27.6**	**36.5**	**11.8**	**99.4**	**124.3**	**8.7**	**823.8**
4 to 5 Category	**703.1**	**811.8**	**332.7**	**107.4**	**184.5**	**382.8**	**60.4**	**11.4**	**2,594.1**
6 to 9 Category	**15.3**	**55.2**	**32.0**	**25.8**	**—**	**12.2**	**—**	**—**	**140.5**
Total Commercial Real Estate	**1,124.7**	**976.2**	**392.3**	**169.7**	**196.3**	**494.4**	**184.7**	**20.1**	**3,558.4**
Non-U.S.									
Risk Rating:									
1 to 3 Category	**555.2**	**16.8**	**—**	**11.1**	**—**	**—**	**78.5**	**—**	**661.6**
4 to 5 Category	**313.1**	**0.7**	**2.0**	**—**	**—**	**157.9**	**39.2**	**1.8**	**514.7**
6 to 9 Category	**—**	**23.1**	**—**	**—**	**—**	**—**	**146.3**	**—**	**169.4**
Total Non-U.S.	**868.3**	**40.6**	**2.0**	**11.1**	**—**	**157.9**	**264.0**	**1.8**	**1,345.7**
Lease Financing, net									
Risk Rating:									
4 to 5 Category	**—**	**—**	**—**	**—**	**—**	**11.4**	**—**	**—**	**11.4**
Total Lease Financing, net	**—**	**—**	**—**	**—**	**—**	**11.4**	**—**	**—**	**11.4**
Other									
Risk Rating:									
1 to 3 Category	**81.7**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**81.7**
4 to 5 Category	**206.5**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**206.5**
Total Other	**288.2**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**288.2**
Total Commercial	**3,772.7**	**2,187.7**	**990.3**	**725.0**	**749.9**	**1,285.8**	**5,490.9**	**59.7**	**15,262.0**
Personal									
Private Client									
Risk Rating:									
1 to 3 Category	**668.6**	**273.7**	**51.7**	**60.4**	**10.2**	**136.1**	**5,392.8**	**47.9**	**6,641.4**
4 to 5 Category	**492.1**	**479.9**	**117.3**	**60.4**	**77.5**	**77.5**	**3,564.7**	**207.3**	**5,076.7**
6 to 9 Category	**6.0**	**0.5**	**22.1**	**3.2**	**—**	**—**	**63.7**	**1.5**	**97.0**
Total Private Client	**1,166.7**	**754.1**	**191.1**	**124.0**	**87.7**	**213.6**	**9,021.2**	**256.7**	**11,815.1**
Residential Real Estate									
Risk Rating:									
1 to 3 Category	**1,554.3**	**317.4**	**42.9**	**109.9**	**205.1**	**627.8**	**152.8**	**1.7**	**3,011.9**
4 to 5 Category	**854.6**	**359.5**	**115.8**	**163.2**	**209.7**	**896.5**	**273.1**	**7.4**	**2,879.8**
6 to 9 Category	**15.3**	**8.3**	**0.7**	**0.5**	**1.9**	**94.8**	**22.5**	**—**	**144.0**
Total Residential Real Estate	**2,424.2**	**685.2**	**159.4**	**273.6**	**416.7**	**1,619.1**	**448.4**	**9.1**	**6,035.7**
Non-U.S.									
Risk Rating:									
1 to 3 Category	**23.3**	**14.9**	**—**	**—**	**—**	**1.8**	**275.6**	**—**	**315.6**
4 to 5 Category	**12.7**	**26.0**	**11.8**	**0.5**	**0.5**	**7.9**	**217.5**	**5.1**	**282.0**
6 to 9 Category	**—**	**—**	**—**	**—**	**—**	**0.3**	**—**	**—**	**0.3**
Total Non-U.S.	**36.0**	**40.9**	**11.8**	**0.5**	**0.5**	**10.0**	**493.1**	**5.1**	**597.9**
Other									
Risk Rating:									
1 to 3 Category	**34.6**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**34.6**
4 to 5 Category	**14.4**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**14.4**
Total Other	**49.0**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**49.0**
Total Personal	**3,675.9**	**1,480.2**	**362.3**	**398.1**	**504.9**	**1,842.7**	**9,962.7**	**270.9**	**18,497.7**
Total Loans and Leases	**$ 7,448.6**	**$ 3,667.9**	**$ 1,352.6**	**$ 1,123.1**	**$ 1,254.8**	**$ 3,128.5**	**$ 15,453.6**	**$ 330.6**	**$33,759.7**

Loans and leases in the “1 to 3” category are expected to exhibit minimal to modest probabilities of default and are characterized by borrowers having the strongest financial qualities, including above average financial flexibility, cash flows and capital levels. Borrowers assigned these ratings are anticipated to experience very little to moderate financial pressure in adverse down-cycle scenarios. As a result of these characteristics, borrowers within this category exhibit a minimal to modest likelihood of loss.

Loans and leases in the "4 to 5" category are expected to exhibit moderate to acceptable probabilities of default and are characterized by borrowers with less financial flexibility than those in the "1 to 3" category. Cash flows and capital levels are generally sufficient to allow for borrowers to meet current requirements, but have fewer financial resources to manage through economic downturns. As a result of these characteristics, borrowers within this category exhibit a moderate likelihood of loss.

Loans and leases in the watch list category have elevated credit risk profiles that are monitored through internal watch lists, and consist of credits with borrower ratings of "6 to 9." These credits, which include all nonaccrual credits, are expected to exhibit minimally acceptable probabilities of default, elevated risk of default, or are currently in default. Borrowers associated with these risk profiles that are not currently in default have limited financial flexibility. Cash flows and capital levels range from acceptable to potentially insufficient to meet current requirements, particularly in adverse down cycle scenarios. As a result of these characteristics, borrowers in this category exhibit an elevated to probable likelihood of loss.

For credit quality indicator information that was required under the former provisions of ASC Topic 310, please refer to Note 6, "Loans and Leases" included under Item 8, "Financial Statements and Supplementary Data" in the Annual Report on Form 10-K for the year ended December 31, 2019.

Past Due Status. Past due status is based on the length of time from the contractual due date a principal or interest payment has been past due. For disclosure purposes, loans and leases that are 29 days past due or less are reported as current.

The following table provides balances and delinquency status of accrual and nonaccrual loans and leases by segment and class, as well as the other real estate owned and nonaccrual asset balances, as of December 31, 2020 and 2019.

TABLE 73: DELINQUENCY STATUS

	ACCRUAL							
(In Millions)	CURRENT	30 – 59 DAYS PAST DUE	60 – 89 DAYS PAST DUE	90 DAYS OR MORE PAST DUE	TOTAL ACCRUAL	NONACCRUAL	TOTAL LOANS AND LEASES	NONACCRUAL WITH NO ALLOWANCE
December 31, 2020								
Commercial								
Commercial and Institutional	**$ 9,877.0**	**$ 153.7**	**$ 1.2**	**$ —**	**$ 10,031.9**	**$ 26.4**	**$ 10,058.3**	**$ 9.1**
Commercial Real Estate	**3,516.2**	**2.0**	**—**	**—**	**3,518.2**	**40.2**	**3,558.4**	**32.3**
Non-U.S.	**1,345.7**	**—**	**—**	**—**	**1,345.7**	**—**	**1,345.7**	**—**
Lease Financing, net	**11.4**	**—**	**—**	**—**	**11.4**	**—**	**11.4**	**—**
Other	**288.2**	**—**	**—**	**—**	**288.2**	**—**	**288.2**	**—**
Total Commercial	**15,038.5**	**155.7**	**1.2**	**—**	**15,195.4**	**66.6**	**15,262.0**	**41.4**
Personal								
Private Client	**11,765.4**	**29.1**	**9.9**	**7.8**	**11,812.2**	**2.9**	**11,815.1**	**2.9**
Residential Real Estate	**5,946.0**	**23.5**	**2.9**	**1.1**	**5,973.5**	**62.2**	**6,035.7**	**53.8**
Non-U.S.	**596.7**	**1.2**	**—**	**—**	**597.9**	**—**	**597.9**	**—**
Other	**49.0**	**—**	**—**	**—**	**49.0**	**—**	**49.0**	**—**
Total Personal	**18,357.1**	**53.8**	**12.8**	**8.9**	**18,432.6**	**65.1**	**18,497.7**	**56.7**
Total Loans and Leases	**$ 33,395.6**	**$ 209.5**	**$ 14.0**	**$ 8.9**	**$ 33,628.0**	**$ 131.7**	**$ 33,759.7**	**$ 98.1**
					Other Real Estate Owned	**$ 0.7**		
					Total Nonaccrual Assets	**$ 132.4**		

(In Millions)	ACCRUAL CURRENT	30 – 59 DAYS PAST DUE	60 – 89 DAYS PAST DUE	90 DAYS OR MORE PAST DUE	TOTAL ACCRUAL	NONACCRUAL	TOTAL LOANS AND LEASES	NONACCRUAL WITH NO ALLOWANCE
December 31, 2019								
Commercial								
Commercial and Institutional	$ 9,068.3	$ 4.1	$ 9.9	$ 1.2	$ 9,083.5	$ 7.6	$ 9,091.1	$ 0.8
Commercial Real Estate	3,089.6	2.3	4.1	4.7	3,100.7	3.6	3,104.3	2.4
Non-U.S.	1,576.3	—	—	—	1,576.3	—	1,576.3	—
Lease Financing, net	65.6	—	—	—	65.6	—	65.6	—
Other	164.0	—	—	—	164.0	—	164.0	—
Total Commercial	13,963.8	6.4	14.0	5.9	13,990.1	11.2	14,001.3	3.2
Personal								
Private Client	11,027.9	33.2	9.5	0.3	11,070.9	0.5	11,071.4	0.5
Residential Real Estate	5,997.7	19.8	4.9	1.2	6,023.6	71.4	6,095.0	66.4
Non-U.S	174.1	0.2	—	—	174.3	0.5	174.8	0.5
Other	67.1	—	—	—	67.1	—	67.1	—
Total Personal	17,266.8	53.2	14.4	1.5	17,335.9	72.4	17,408.3	67.4
Total Loans and Leases	$ 31,230.6	$ 59.6	$ 28.4	$ 7.4	$ 31,326.0	$ 83.6	$ 31,409.6	$ 70.6
					Other Real Estate Owned	$ 3.2		
					Total Nonaccrual Assets	$ 86.8		

Interest income that would have been recorded for nonaccrual loans and leases in accordance with their original terms was $4.6 million in 2020, $7.3 million in 2019, and $8.0 million in 2018.

Collateral Dependent Financial Assets. A financial asset is collateral-dependent when the borrower is experiencing financial difficulty and repayment is expected to be provided substantially through the sale or operation of the collateral. Most of Northern Trust's collateral dependent credit exposure relates to its residential real estate portfolio for which the collateral is usually the underlying real estate property. For collateral dependent financial assets, it is Northern Trust's policy to reserve or charge-off the difference between the amortized cost basis of the loan and the value of the collateral. The collateral dependent financial asset balance as of December 31, 2020 was immaterial to Northern Trust's financial statements.

Nonaccrual Loans and Troubled Debt Restructurings (TDRs). A loan that has been modified as a concession by Northern Trust or a bankruptcy court resulting from the debtor's financial difficulties is referred to as a troubled debt restructuring (TDR). Included within nonaccrual loans were $38.9 million and $54.9 million of nonaccrual TDRs and $29.3 million and $27.7 million of accrual TDRs as of December 31, 2020 and 2019, respectively. There were $10.4 million and $8.2 million of aggregate undrawn loan commitments and standby letters of credit at December 31, 2020 and 2019, respectively, issued to borrowers with TDR modifications of loans.

The following table provides, by segment and class, the number of TDR modifications of loans and leases during the years ended December 31, 2020, and 2019, and the recorded investments and unpaid principal balances as of December 31, 2020 and 2019.

TABLE 74: TROUBLED DEBT RESTRUCTURINGS

($ In Millions)	NUMBER OF LOANS AND LEASES	RECORDED INVESTMENT	UNPAID PRINCIPAL BALANCE
December 31, 2020			
Commercial			
Commercial and Institutional	**3**	**$ 24.3**	**$ 24.5**
Total Commercial	**3**	**24.3**	**24.5**
Personal			
Residential Real Estate	**22**	**16.2**	**16.7**
Total Personal	**22**	**16.2**	**16.7**
Total Loans and Leases	**25**	**$ 40.5**	**$ 41.2**

Note: Period-end balances reflect all paydowns and charge-offs during the year.

($ In Millions)	NUMBER OF LOANS AND LEASES	RECORDED INVESTMENT	UNPAID PRINCIPAL BALANCE
December 31, 2019			
Commercial			
Commercial and Institutional	1	$ 7.5	$ 8.8
Commercial Real Estate	2	—	—
Total Commercial	3	7.5	8.8
Personal			
Residential Real Estate	45	37.4	38.8
Total Personal	45	37.4	38.8
Total Loans and Leases	48	$ 44.9	$ 47.6

Note: Period-end balances reflect all paydowns and charge-offs during the year.

TDR modifications involve extensions of term, deferrals of principal, interest rate concessions, and other modifications. Other modifications typically reflect other nonstandard terms which Northern Trust would not offer in non-troubled situations.

During the year ended December 31, 2020, the TDR modifications of loans within residential real estate were primarily extensions of term, other modifications, deferrals of principal, and interest rate concessions. During the year ended December 31, 2020, TDR modifications of loans within commercial and institutional were other modifications and extensions of term.

During the year ended December 31, 2019, the TDR modifications of loans within residential real estate were primarily other modifications, extensions of term, deferrals of principal, and interest rate concessions. During the year ended December 31, 2019, TDR modifications of loans within commercial and institutional and commercial real estate were other modifications, extensions of term, and deferrals of principal.

There were zero loans or leases TDR modifications during the previous twelve-month period which subsequently had a payment default during the year ended December 31, 2020.

There were five loans or leases TDR modifications during the previous twelve-month period which subsequently had a payment default during the year ended December 31, 2019. The total recorded investment for these loans was approximately $5.8 million and the unpaid principal balance for these loans was approximately $6.1 million.

Northern Trust may obtain physical possession of real estate via foreclosure on an in-substance repossession. As of December 31, 2020 and 2019, Northern Trust held foreclosed real estate properties with a carrying value of $0.7 million and $3.2 million, respectively, as a result of obtaining physical possession. In addition, as of December 31, 2020 and 2019, Northern Trust had loans with a carrying value of $7.9 million and $18.1 million, respectively, for which formal foreclosure proceedings were in process.

TDR Relief — COVID-19. Due to the economic environment arising from the COVID-19 pandemic, there have been two forms of relief provided for classifying loans as TDRs: the Interagency Guidance (as defined below) and the CARES Act.

Various banking regulators, including the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the National Credit Union Administration, the Office of the Comptroller of the Currency, and the

Consumer Financial Protection Bureau, have issued guidance in the April 7, 2020 *Interagency Statement on Loan Modifications and Reporting for Financial Institutions Working with Customers Affected by the Coronavirus* (revised) on loan modification treatment (Interagency Guidance) pursuant to which financial institutions can apply ASC 310-40 *Receivables – Troubled Debt Restructurings by Creditors.* In accordance with the Interagency Guidance, a loan modification is not considered a TDR if the modification is related to COVID-19; the borrower had been current (not more than 29 days past due) when the modification program was implemented; and the modification includes payment deferrals for not more than 6 months.

Under section 4013 of the CARES Act, relief provided to lenders exempting certain loan modifications which would otherwise be classified as TDRs from such classification applies for loans that were not more than 30 days past due as of December 31, 2019. The TDR relief under the CARES Act applies to COVID-19-related modifications that were made from March 1, 2020 until the earlier of (a) January 1, 2022 (this date was updated from December 31, 2020, after the Consolidated Appropriations Act, 2021 was enacted on December 27, 2020) or (b) 60 days from the date the COVID-19 national emergency officially ends.

Financial institutions may account for eligible loan modifications under the Interagency Guidance and/or the CARES Act. Northern Trust has elected to apply both the CARES Act and the Interagency Guidance, as applicable, in providing borrowers with loan modification relief in response to the COVID-19 pandemic. All other types of modifications which do not meet the CARES Act or Interagency Guidance requirements continue to be governed by existing regulations and accounting policies.

The following tables provide, by segment and class, the number of total COVID-19-related loan modifications including the loan volume and deferred principal and interest balances as of December 31, 2020, for which Northern Trust applied an exemption from TDR classification that are in active deferral (loans currently in the deferral period) or completed deferral (loans that returned to their regular payment schedule).

TABLE 75: COVID-19 LOAN MODIFICATIONS NOT CONSIDERED TDRS IN ACTIVE DEFERRAL STATUS

	DECEMBER 31, 2020			
($ In Millions)	NUMBER OF COVID-19 RELATED MODIFICATIONS	LOAN VOLUME	DEFERRED PRINCIPAL AMOUNT	DEFERRED INTEREST AMOUNT
Commercial				
Commercial and Institutional	**1**	**$ 6.0**	**$ —**	**$ —**
Commercial Real Estate	**1**	**0.7**	**—**	**—**
Total Commercial	**2**	**$ 6.7**	**$ —**	**$ —**
Personal				
Private Client	**8**	**$ 8.9**	**$ 0.1**	**$ 0.1**
Residential Real Estate	**21**	**5.1**	**0.1**	**0.1**
Total Personal	**29**	**$ 14.0**	**$ 0.2**	**$ 0.2**
Total Loans	**31**	**$ 20.7**	**$ 0.2**	**$ 0.2**

TABLE 76: COVID-19 LOAN MODIFICATIONS NOT CONSIDERED TDRS THAT HAVE COMPLETED DEFERRAL

	DECEMBER 31, 2020			
($ In Millions)	NUMBER OF COVID-19 RELATED MODIFICATIONS	LOAN VOLUME	DEFERRED PRINCIPAL AMOUNT	DEFERRED INTEREST AMOUNT
Commercial				
Commercial and Institutional	**99**	**$ 249.3**	**$ 0.1**	**$ 2.2**
Commercial Real Estate	**97**	**467.8**	**—**	**3.2**
Total Commercial	**196**	**$ 717.1**	**$ 0.1**	**$ 5.4**
Personal				
Private Client	**27**	**$ 171.9**	**$ —**	**$ 1.1**
Residential Real Estate	**412**	**182.7**	**1.6**	**2.2**
Total Personal	**439**	**$ 354.6**	**$ 1.6**	**$ 3.3**
Total Loans	**635**	**$ 1,071.7**	**$ 1.7**	**$ 8.7**

Not included in the table above are 57 loans with a previous $63.0 million loan balance that had been granted payment deferrals but have since paid off.

Northern Trust continues to accrue and recognize interest income during the loan deferral period, and hence has not moved these loans to nonaccrual or reported them as past due. Further, these loan balances continue to be assessed on a collective basis for purposes of measuring an allowance for expected credit losses.

Note 7 – Allowance for Credit Losses

During the first quarter of 2020, the Corporation implemented a change in the classification of certain loans and leases to specific segments to enhance the consistency of its reporting across various regulatory regimes. The allowance for credit losses as of and prior to December 31, 2019 remains unadjusted, as the impact of the reclassification on the allowance was immaterial.

The Corporation adopted Accounting Standards Update (ASU) No. 2016-13, "Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments" (ASU 2016-13) on January 1, 2020, which significantly changed the way impairment of financial instruments is recognized by requiring immediate recognition of estimated credit losses expected to occur over the remaining life of financial instruments. An opening balance sheet adjustment related to the adoption of ASU 2016-13 resulted in an increase to the allowance for credit losses of $13.7 million, with a corresponding adjustment to decrease retained earnings by $10.1 million, net of tax.

Allowance and Provision for Credit Losses. The allowance for credit losses — which represents management's best estimate of lifetime expected credit losses related to various portfolios subject to credit risk, off-balance sheet credit exposures, and specific borrower relationships — is determined by management through a disciplined credit review process. Northern Trust measures expected credit losses of financial assets with similar risk characteristics on a collective basis. A financial asset is measured individually if it does not share similar risk characteristics with other financial assets and the related allowance is determined through an individual evaluation.

Management's estimates utilized in establishing an appropriate level of allowance for credit losses are not dependent on any single assumption. In determining an appropriate allowance level, management evaluates numerous variables, many of which are interrelated or dependent on other assumptions and estimates, and takes into consideration past events, current conditions and reasonable and supportable forecasts. Northern Trust employs multiple scenarios over a reasonable and supportable period of currently two years to project future conditions. For periods beyond the reasonable and supportable period, Northern Trust reverts to its own historical loss experiences on a straight-line basis over four quarters. The primary forecast, consistent with Northern Trust's economic outlook publications, assumes continued economic recovery from the challenges of COVID-19, with steady growth and a falling unemployment rate over the forecast horizon. An alternative scenario is also considered, which contemplates a resurgence of the virus, causing a double-dip recession.

The results of the credit reserve estimation methodology are reviewed quarterly by Northern Trust's Credit Loss Reserve Committee, which receives input from Credit Risk Management, Treasury, Corporate Finance, the Economic Research group, and each of Northern Trust's business units. The Credit Loss Reserve Committee determines the probability weights applied to each forecast approved by Northern Trust's Macroeconomic Scenario Development Committee, and also reviews and approves qualitative adjustments to the collective allowance in line with Northern Trust's qualitative adjustment framework.

The following table provides information regarding changes in the total allowance for credit losses.

TABLE 77: CHANGES IN THE ALLOWANCE FOR CREDIT LOSSES

	2020				
(In Millions)	LOANS AND LEASES	UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	DEBT SECURITIES HELD TO MATURITY	OTHER FINANCIAL ASSETS	TOTAL
Balance at End of Prior Period	$ 104.5	$ 19.9	$ —	$ —	$ 124.4
Cumulative Effect Adjustment	(2.2)	8.9	6.6	0.4	13.7
Balance at Beginning of Period	102.3	28.8	6.6	0.4	138.1
Charge-Offs	(9.7)	—	—	—	(9.7)
Recoveries	6.5	—	—	—	6.5
Net Recoveries (Charge-Offs)	(3.2)	—	—	—	(3.2)
Provision for Credit Losses	91.6	32.3	0.7	0.4	125.0
Balance at End of Period	$ 190.7	$ 61.1	$ 7.3	$ 0.8	$ 259.9

(In Millions)	2019 LOANS AND LEASES	2019 UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	2019 TOTAL
Balance at Beginning of Period	$ 112.6	$ 25.6	$ 138.2
Charge-Offs	(6.5)	—	(6.5)
Recoveries	7.2	—	7.2
Net Recoveries (Charge-Offs)	0.7	—	0.7
Provision for Credit Losses	(8.8)	(5.7)	(14.5)
Balance at End of Period	$ 104.5	$ 19.9	$ 124.4

(In Millions)	2018 LOANS AND LEASES	2018 UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT	2018 TOTAL
Balance at Beginning of Period	$ 131.2	$ 22.6	$ 153.8
Charge-Offs	(10.1)	—	(10.1)
Recoveries	9.0	—	9.0
Net Recoveries (Charge-Offs)	(1.1)	—	(1.1)
Provision for Credit Losses	(17.5)	3.0	(14.5)
Balance at End of Period	$ 112.6	$ 25.6	$ 138.2

The current-year provision primarily reflected an increase in the reserve evaluated on a collective basis. The increase in the collective basis reserve was primarily driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts, with increases primarily in the commercial and institutional and commercial real estate portfolios.

For credit exposure and the associated allowance related to fee receivables, please refer to Note 18, “Revenue from Contracts with Clients.” For information related to the allowance for debt securities available for sale, please refer to Note 4, “Securities.” For all other financial assets recognized at amortized cost, which include Cash and Due from Banks, Other Central Bank Deposits, Interest Bearing Deposits with Banks, Federal Funds Sold, and Other Assets, please refer to the Allowance for Other Financial Assets section within this footnote.

Allowance for the Loan and Lease Portfolio. The following table provides information regarding changes in the total allowance for credit losses, including undrawn loan commitments and standby letters of credit, by segment.

TABLE 78: CHANGES IN THE ALLOWANCE FOR CREDIT LOSSES RELATED TO LOANS AND LEASES

	2020					
	LOANS AND LEASES			**UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT**		
(In Millions)	**COMMERCIAL**	**PERSONAL**	**TOTAL**	**COMMERCIAL**	**PERSONAL**	**TOTAL**
Balance at End of Prior Period	**$ 58.1**	**$ 46.4**	**$ 104.5**	**$ 15.8**	**$ 4.1**	**$ 19.9**
Cumulative Effect Adjustment	**(5.9)**	**3.7**	**(2.2)**	**11.9**	**(3.0)**	**8.9**
Balance at Beginning of Period	**52.2**	**50.1**	**102.3**	**27.7**	**1.1**	**28.8**
Charge-Offs	**(6.3)**	**(3.4)**	**(9.7)**	**—**	**—**	**—**
Recoveries	**2.4**	**4.1**	**6.5**	**—**	**—**	**—**
Net Recoveries (Charge-Offs)	**(3.9)**	**0.7**	**(3.2)**	**—**	**—**	**—**
Provision for Credit Losses	**93.9**	**(2.3)**	**91.6**	**29.9**	**2.4**	**32.3**
Balance at End of Period	**$ 142.2**	**$ 48.5**	**$ 190.7**	**$ 57.6**	**$ 3.5**	**$ 61.1**

	2019					
	LOANS AND LEASES			UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT		
(In Millions)	COMMERCIAL	PERSONAL	TOTAL	COMMERCIAL	PERSONAL	TOTAL
Balance at Beginning of Period	$ 57.6	$ 55.0	$ 112.6	$ 21.1	$ 4.5	$ 25.6
Charge-Offs	(3.0)	(3.5)	(6.5)	—	—	—
Recoveries	0.9	6.3	7.2	—	—	—
Net Recoveries (Charge-Offs)	(2.1)	2.8	0.7	—	—	—
Provision for Credit Losses	2.6	(11.4)	(8.8)	(5.3)	(0.4)	(5.7)
Balance at End of Period	$ 58.1	$ 46.4	$ 104.5	$ 15.8	$ 4.1	$ 19.9

	2018					
	LOANS AND LEASES			UNDRAWN LOAN COMMITMENTS AND STANDBY LETTERS OF CREDIT		
(In Millions)	COMMERCIAL	PERSONAL	TOTAL	COMMERCIAL	PERSONAL	TOTAL
Balance at Beginning of Period	$ 63.5	$ 67.7	$ 131.2	$ 17.3	$ 5.3	$ 22.6
Charge-Offs	(0.9)	(9.2)	(10.1)	—	—	—
Recoveries	1.7	7.3	9.0	—	—	—
Net Recoveries (Charge-Offs)	0.8	(1.9)	(1.1)	—	—	—
Provision for Credit Losses	(6.7)	(10.8)	(17.5)	3.8	(0.8)	3.0
Balance at End of Period	$ 57.6	$ 55.0	$ 112.6	$ 21.1	$ 4.5	$ 25.6

The increase to the allowance for both loans and leases and undrawn loan commitments and standby letters of credit for 2020 was primarily due to an increase in the reserve evaluated on a collective basis driven by current and projected economic conditions and downgrades in the portfolio, both resulting from the ongoing COVID-19 pandemic and related market and economic impacts. The largest increases were in the commercial and institutional and commercial real estate portfolios for the allowance for loans and leases and the commercial and institutional portfolio for the allowance for undrawn loan commitments and standby letters of credit.

The following table provides information regarding the recorded investments in loans and leases and the allowance for credit losses for loans and leases and undrawn loan commitments and standby letters of credit by segment as of December 31, 2020 and 2019.

TABLE 79: RECORDED INVESTMENTS IN LOANS AND LEASES

	DECEMBER 31, 2020			DECEMBER 31, 2019		
(In Millions)	**COMMERCIAL**	**PERSONAL**	**TOTAL**	COMMERCIAL	PERSONAL	TOTAL
Loans and Leases						
Evaluated on an Individual Basis	**$ 66.6**	**$ 65.1**	**$ 131.7**	$ 10.4	$ 81.8	$ 92.2
Evaluated on a Collective Basis	**15,195.4**	**18,432.6**	**33,628.0**	13,990.9	17,326.5	31,317.4
Total Loans and Leases	**15,262.0**	**18,497.7**	**33,759.7**	14,001.3	17,408.3	31,409.6
Allowance for Credit Losses on Credit Exposures						
Evaluated on an Individual Basis	**8.8**	**0.3**	**9.1**	3.4	1.6	5.0
Evaluated on a Collective Basis	**133.4**	**48.2**	**181.6**	54.7	44.8	99.5
Allowance Assigned to Loans and Leases	**142.2**	**48.5**	**190.7**	58.1	46.4	104.5
Allowance for Undrawn Loan Commitments and Standby Letters of Credit						
Evaluated on an Individual Basis	**1.6**	**—**	**1.6**	1.9	—	1.9
Evaluated on a Collective Basis	**56.0**	**3.5**	**59.5**	13.9	4.1	18.0
Allowance Assigned to Undrawn Loan Commitments and Standby Letters of Credit	**57.6**	**3.5**	**61.1**	15.8	4.1	19.9
Total Allowance Assigned to Loans and Leases and Undrawn Loan Commitments and Standby Letters of Credit	**$ 199.8**	**$ 52.0**	**$ 251.8**	$ 73.9	$ 50.5	$ 124.4

Allowance for Debt Securities Held to Maturity Securities Portfolio. The following table provides information regarding changes in the total allowance for credit losses for debt securities held to maturity during 2020.

TABLE 80: CHANGES IN THE ALLOWANCE FOR CREDIT LOSSES RELATED TO DEBT SECURITIES HELD TO MATURITY

	2020					
(In Millions)	CORPORATE DEBT	NON-U.S. GOVERNMENT	SUB-SOVEREIGN, SUPERNATIONAL, AND NON-U.S. AGENCY BONDS	COVERED BONDS	OTHER	TOTAL
Balance at End of Prior Period	$ —	$ —	$ —	$ —	$ —	$ —
Cumulative Effect Adjustment	**0.8**	**0.3**	**0.9**	—	**4.6**	**6.6**
Balance at Beginning of Period	**0.8**	**0.3**	**0.9**	—	**4.6**	**6.6**
Provision for Credit Losses	—	**(0.1)**	**0.3**	**0.1**	**0.4**	**0.7**
Balance at End of Period	**$ 0.8**	**$ 0.2**	**$ 1.2**	**$ 0.1**	**$ 5.0**	**$ 7.3**

Prior to the adoption of ASU 2016-13, Northern Trust recognized $4.4 million of cumulative Other-Than-Temporary-Impairment (OTTI) losses on the debt securities classified as other as of December 31, 2019. For debt securities with previous OTTI losses recorded, Northern Trust applied ASU 2016-13 on a prospective basis whereby the amortized cost basis of the impaired security remains unchanged immediately before and after adopting ASU 2016-13. The allowance recorded at January 1, 2020 for debt securities held to maturity equals the difference between the calculated expected loss and the amount of OTTI loss previously recorded and represents the cumulative effect adjustment required upon the adoption of ASU 2016-13.

The allowance attributable to debt securities held to maturity for the twelve months ended December 31, 2020 was primarily due to the reserve evaluated on a collective basis driven by current and projected economic conditions resulting from the ongoing COVID-19 pandemic and related market and economic impacts.

Allowance for Other Financial Assets. The allowance for Other Financial Assets consists of the allowance for Cash and Due from Banks, Other Central Bank Deposits, Interest Bearing Deposits with Banks, Federal Funds Sold, and Other Assets. Northern Trust's portfolio is composed mostly of institutions within the "1 to 3" internal borrower rating category and expected to exhibit minimal to modest likelihood of loss. The allowance for credit losses related to Other Financial Assets was $0.8 million as of December 31, 2020.

Accrued Interest. Northern Trust elected not to measure an allowance for credit losses for accrued interest receivables related to its loan and securities portfolios as its policy is to write-off uncollectible accrued interest receivable balances in a timely manner. The following table provides the amount of accrued interest excluded from the amortized cost basis of the following portfolios.

TABLE 81: ACCRUED INTEREST

(In Millions)	DECEMBER 31, 2020	DECEMBER 31, 2019
Loans and Leases	**$ 55.3**	$ 84.5
Debt Securities		
Held to Maturity	**$ 73.8**	$ 82.3
Available for Sale	**106.3**	119.0
Other Financial Assets	**$ 1.4**	$ 14.7

The amount of accrued interest reversed through interest income for loans and leases was immaterial and there was no accrued interest reversed through interest income related to any other financial assets during 2020.

Note 8 – Concentrations of Credit Risk

Concentrations of credit risk exist if a number of borrowers or other counterparties are engaged in similar activities and have similar economic characteristics that would cause their ability to meet contractual obligations to be similarly affected by changes in economic or other conditions. The fact that a credit exposure falls into one of these groups does not necessarily indicate that the credit has a higher than normal degree of credit risk. These groups are: banks and bank holding companies, residential real estate, and commercial real estate.

Banks and Bank Holding Companies. At December 31, 2020, on-balance sheet credit risk to banks and bank holding companies, both U.S. and non-U.S., consisted primarily of Interest-Bearing Deposits with Banks of $4.4 billion, demand balances maintained at correspondent banks of $4.3 billion, and Securities Purchased under Agreements to Resell of $1.6 billion. At December 31, 2019, on-balance sheet credit risk to banks and bank holding companies, both U.S. and non-U.S., consisted primarily of Interest-Bearing Deposits with Banks of $4.9 billion, demand balances maintained at correspondent banks of $4.3 billion, Securities Purchased under Agreements to Resell of $707.8 million, and Federal Funds Sold of $5.0 million. Credit risk associated with U.S. and non-U.S. banks and bank holding companies deemed to be counterparties by Credit Risk Management is managed by the Capital Markets Credit Committee. Credit limits are established through a review process that includes an internally-prepared financial analysis, use of an internal risk rating system and consideration of external ratings from rating agencies. Northern Trust places deposits with banks that have strong internal and external credit ratings and the average life to maturity of deposits with banks is maintained on a short-term basis in order to respond quickly to changing credit conditions.

Residential Real Estate. Residential real estate loans totaled $6.0 billion at December 31, 2020 and 2019, representing 19% and 20%, respectively, of total U.S. loans and leases. Residential real estate loans consist of traditional first lien mortgages and equity credit lines, which generally require a loan-to-collateral value ratio of no more than 65% to 80% at inception. Revaluations of supporting collateral are obtained upon refinancing or default or when otherwise considered warranted. Collateral revaluations for mortgages are performed by independent third parties. Of the $6.0 billion residential real estate loans at December 31, 2020, $1.6 billion were in Florida, $1.3 billion were in California, and $894.9 million were in the greater Chicago area, with the remainder distributed throughout the other geographic regions within the U.S. served by Northern Trust. Legally binding undrawn commitments to extend residential real estate credit, which are primarily equity credit lines, totaled $676.1 million and $714.2 million at December 31, 2020 and 2019, respectively.

Commercial Real Estate. In managing its credit exposure, management has defined a commercial real estate loan as one where: (1) the borrower’s principal business activity is the acquisition or the development of real estate for commercial purposes; (2) the principal collateral is real estate held for commercial purposes, and loan repayment is expected to flow from the operation of the property; or (3) the loan repayment is expected to flow from the sale or refinance of real estate as a normal and ongoing part of the business. Unsecured lines of credit to firms or individuals engaged in commercial real estate endeavors are included without regard to the use of loan proceeds. The commercial real estate portfolio consists of commercial mortgages and construction, acquisition and development loans extended primarily to experienced investors well known to Northern Trust. Underwriting standards generally reflect conservative loan-to-value ratios and debt service coverage requirements. Recourse to borrowers through guarantees is also commonly required. Commercial mortgage financing is provided for the acquisition or refinancing of income-producing properties. Cash flows from the properties generally are sufficient to amortize the loan. These loans are primarily located in the California, Illinois, Florida, Texas, and New York markets. Construction, acquisition and development loans provide financing for commercial real estate prior to rental income stabilization. The intent is generally that the borrower will sell the project or refinance the loan through a commercial mortgage with Northern Trust or another financial institution upon completion.

The table below provides additional detail regarding commercial real estate loan types. During the first quarter of 2020, the Corporation implemented a change in the classification of certain loans and leases to specific segments to enhance the consistency of its reporting across various regulatory regimes. As a result, commercial real estate balances as of December 31, 2019 below have been adjusted to conform to the presentation for periods ended after such date. The adjustments generally reflect reclassification of loans from the commercial real estate class to commercial and institutional, residential real estate, and private client classes. There was no impact on total Loans and Leases previously reported.

TABLE 82: COMMERCIAL REAL ESTATE LOANS

	DECEMBER 31,	
(In Millions)	**2020**	2019
Commercial Mortgages		
Office	**$ 831.3**	$ 754.3
Apartment/ Multi-family	**906.8**	646.5
Retail	**561.3**	573.3
Industrial/ Warehouse	**344.2**	278.0
Other	**409.9**	420.1
Total Commercial Mortgages	**3,053.5**	2,672.2
Construction, Acquisition and Development Loans	**504.9**	432.1
Total Commercial Real Estate Loans	**$ 3,558.4**	$ 3,104.3

Note 9 – Buildings and Equipment

A summary of Buildings and Equipment is presented in the following table.

TABLE 83: BUILDINGS AND EQUIPMENT

	DECEMBER 31, 2020		
(In Millions)	ORIGINAL COST	ACCUMULATED DEPRECIATION	NET BOOK VALUE
Land and Improvements	**$ 14.5**	**$ 0.5**	**$ 14.0**
Buildings	**257.8**	**163.0**	**94.8**
Equipment	**816.4**	**596.8**	**219.6**
Leasehold Improvements	**523.9**	**337.4**	**186.5**
Total Buildings and Equipment	**$ 1,612.6**	**$ 1,097.7**	**$ 514.9**

	DECEMBER 31, 2019		
(In Millions)	ORIGINAL COST	ACCUMULATED DEPRECIATION	NET BOOK VALUE
Land and Improvements	$ 14.5	$ 0.5	$ 14.0
Buildings	305.8	156.0	149.8
Equipment	731.0	521.5	209.5
Leasehold Improvements	416.1	306.1	110.0
Total Buildings and Equipment	$ 1,467.4	$ 984.1	$ 483.3

The charge for depreciation amounted to $116.5 million in 2020, $103.2 million in 2019, and $108.6 million in 2018 on the consolidated statements of income.

Note 10 – Lease Commitments

At December 31, 2020, Northern Trust was obligated under a number of non-cancelable operating leases, primarily for real estate. Certain leases contain rent escalation clauses based on market indices, renewal option clauses calling for increased rentals, and rental payments based on usage. There are no restrictions imposed by any lease agreement regarding the payment of dividends, debt financing or Northern Trust entering into further lease agreements.

The components of lease costs for the years ended December 31, 2020 and 2019 were as follows.

TABLE 84: LEASE COST COMPONENTS

(In Millions)	DECEMBER 31, 2020	DECEMBER 31, 2019
Operating Lease Cost	**$ 119.4**	$ 102.2
Variable Lease Cost	**32.7**	38.7
Sublease Income	**(4.8)**	(6.6)
Total Lease Cost	**$ 147.3**	$ 134.3

The following table presents a maturity analysis of lease liabilities as of December 31, 2020.

TABLE 85: MATURITY OF LEASE LIABILITIES

(In Millions)		MATURITY OF LEASE LIABILITIES
2021	$	**99.1**
2022		**92.6**
2023		**85.6**
2024		**74.7**
2025		**77.0**
Later Years		**372.5**
Total Lease Payments		**801.5**
Less: Imputed Interest		**(100.9)**
Present Value of Lease Liabilities	$	**700.6**

As of December 31, 2020, Northern Trust had commitments for operating leases in addition to the above that have not yet commenced for approximately $32.3 million. These operating leases are for the use of office space with lease terms between 10 and 15 years and are expected to commence during the first half of 2021.

Northern Trust uses its incremental borrowing rate to determine the present value of lease payments for operating leases. Operating lease right-of-use (ROU) assets and lease liabilities may include options to extend or terminate the lease only when it is reasonably certain that Northern Trust will exercise that option. Northern Trust elects not to separate lease and non-lease components of a contract for its real estate leases. The location and amount of ROU assets and lease liabilities recorded on the consolidated balance sheets as of December 31, 2020 and 2019 are presented in the following table.

TABLE 86: LOCATION AND AMOUNT OF LEASE ASSETS AND LIABILITIES

(In Millions)	LOCATION OF LEASE ASSETS AND LEASE LIABILITIES ON THE BALANCE SHEET		DECEMBER 31, 2020		DECEMBER 31, 2019
Assets					
Operating Lease Right-of-Use Asset	Other Assets	$	**560.5**	$	491.6
Liabilities					
Operating Lease Liability	Other Liabilities	$	**700.6**	$	603.1

The weighted-average remaining lease term and weighted-average discount rate applied to leases as of December 31, 2020 and 2019 were as follows:

TABLE 87: WEIGHTED-AVERAGE REMAINING LEASE TERM AND DISCOUNT RATE

	DECEMBER 31, 2020	DECEMBER 31, 2019
Operating Leases		
Weighted-Average Remaining Lease Term	**10.0 years**	**9.2 years**
Weighted-Average Discount Rate	**2.5 %**	**3.0 %**

The following table provides supplemental cash flow information related to leases for the years ended December 31, 2020 and 2019.

TABLE 88: SUPPLEMENTAL CASH FLOW INFORMATION

(In Millions)		DECEMBER 31, 2020		DECEMBER 31, 2019
Supplemental cash flow information				
Cash paid for amounts included in the measurement of lease liabilities - operating cash flows	$	**107.9**	$	**101.2**
Supplemental non-cash information				
Right-of-use assets obtained in exchange for new operating lease liabilities	$	**164.8**	$	**108.3**

Note 11 – Goodwill and Other Intangibles

Goodwill. Changes by reporting segment in the carrying amount of Goodwill for the years ended December 31, 2020 and 2019, including the effect of foreign exchange rates on non-U.S. dollar denominated balances, were as follows.

TABLE 89: GOODWILL

(In Millions)	CORPORATE & INSTITUTIONAL SERVICES	WEALTH MANAGEMENT	TOTAL
Balance at December 31, 2018	$ 598.2	$ 71.1	$ 669.3
Goodwill Acquired	23.5	—	23.5
Foreign Exchange Rates	4.0	—	4.0
Balance at December 31, 2019	$ 625.7	$ 71.1	$ 696.8
Foreign Exchange Rates	**10.3**	**0.1**	**10.4**
Balance at December 31, 2020	**$ 636.0**	**$ 71.2**	**$ 707.2**

The goodwill impairment test is performed at least annually at the reporting-unit level. The Corporation has determined its reporting units for this purpose to be Corporate & Institutional Services and Wealth Management. Goodwill was tested for impairment during the fourth quarter of 2020 using a quantitative assessment in which the estimated fair values of the reporting units are compared to their carrying values. Impairment is deemed to exist if the carrying value of a reporting unit exceeds its estimated fair value. Based upon the quantitative assessments, there were no impairments to goodwill in 2020.

Other Intangible Assets Subject to Amortization. The gross carrying amount and accumulated amortization of other intangible assets subject to amortization as of December 31, 2020 and 2019 were as follows.

TABLE 90: OTHER INTANGIBLE ASSETS

	DECEMBER 31,	
(In Millions)	**2020**	2019
Gross Carrying Amount	**$ 221.3**	$ 207.2
Less: Accumulated Amortization	**108.7**	86.6
Net Book Value	**$ 112.6**	$ 120.6

Other intangible assets consist primarily of the value of acquired client relationships and are included in Other Assets on the consolidated balance sheets. Amortization expense related to other intangible assets was $16.9 million, $16.6 million, and $17.4 million for the years ended December 31, 2020, 2019, and 2018, respectively. Amortization for the years 2021, 2022, 2023, 2024, and 2025 is estimated to be $15.1 million, $10.5 million, $10.2 million, $10.1 million, and $9.5 million respectively.

In the third quarter of 2019, Northern Trust completed its acquisition of Belvedere Advisors LLC, a provider of digital investment advisory and asset management services. The purchase price recorded in connection with the closing of the acquisition, which is subject to certain performance-related adjustments over a five-year period after the acquisition date, totaled $17.6 million inclusive of contingent consideration. Goodwill and developed technology associated with the transaction totaled $9.3 million and $8.3 million, respectively.

In the first quarter of 2019, Northern Trust completed the purchase accounting related to its acquisition of BEx LLC, a provider of foreign exchange software solutions. The purchase price recorded in connection with the closing of the acquisition totaled $37.9 million. Goodwill and developed technology associated with the acquisition totaled $12.5 million and $25.0 million, respectively.

Capitalized Software. The gross carrying amount and accumulated amortization of capitalized software as of December 31, 2020 and 2019 were as follows.

TABLE 91: CAPITALIZED SOFTWARE

	DECEMBER 31,	
(In Millions)	**2020**	2019
Gross Carrying Amount	**$ 4,337.4**	$ 3,885.2
Less: Accumulated Amortization	**2,744.5**	2,377.9
Net Book Value	**$ 1,592.9**	$ 1,507.3

Capitalized software, which is included in Other Assets on the consolidated balance sheet, consists primarily of purchased software, software licenses, and allowable internal costs, including compensation relating to software developed for internal use. Fees paid for the use of software licenses that are not hosted by Northern Trust are expensed as incurred. Amortization expense, which is included in Equipment and Software on the consolidated statements of income, amounted to $366.9 million in 2020, $339.1 million in 2019, and $334.9 million in 2018.

Note 12 – Deposits

The following table provides the scheduled maturity of total time deposits in denominations of $250,000 or greater at December 31, 2020.

TABLE 92: REMAINING MATURITY OF TIME DEPOSITS $250,000 OR MORE

	DECEMBER 31, 2020		
(In Millions)	U.S. OFFICE CERTIFICATES OF DEPOSIT	NON-U.S. OFFICES OTHER TIME	TOTAL
1 Year or Less	**$ 660.2**	**$ 205.4**	**$ 865.6**
Over 1 Year to 2 Years	**36.1**	**—**	**36.1**
Over 2 Years to 3 Years	**3.1**	**—**	**3.1**
Over 3 Years to 4 Years	**1.2**	**—**	**1.2**
Over 4 Years to 5 Years	**0.3**	**—**	**0.3**
Over 5 Years	**0.5**	**—**	**0.5**
Total	**$ 701.4**	**$ 205.4**	**$ 906.8**

As of December 31, 2019, there were $1.7 billion of time deposits in denominations of $250,000 or greater, of which $711.4 million were Certificates of Deposit and $1.0 billion were non-U.S.

Note 13 – Senior Notes and Long-Term Debt

Senior Notes. A summary of Senior Notes outstanding at December 31, 2020 and 2019 is presented in the following table.

TABLE 93: SENIOR NOTES

		DECEMBER 31,	
($ In Millions)	RATE	**2020**	2019
Corporation-Senior Notes(1)			
Fixed Rate Due Nov. 2020(2)	3.45 %	**$ —**	$ 499.9
Fixed Rate Due Aug. 2021(2)	3.375	**499.8**	499.4
Fixed Rate Due Aug. 2022(2)	2.375	**499.6**	499.4
Fixed Rate Due Aug. 2028(3)(4)	3.65	**584.4**	547.2
Fixed Rate Due May 2029(3)(4)	3.15	**567.9**	527.1
Fixed Rate Due May 2030(3)(4)	1.95	**970.7**	—
Total Senior Notes		**$ 3,122.4**	$ 2,573.0

(1) *As of December 31, 2020, debt issuance costs of $3.4 million are included as a direct deduction from the carrying amount and amortized on a straight-line basis over the life of the Note.*
(2) *Not redeemable prior to maturity.*
(3) *Redeemable within three months of maturity.*
(4) *Interest rate swap contracts were entered into to modify the interest expense from fixed rates to floating rates. The swaps are recorded as fair value hedges and increases in the carrying values of senior notes outstanding of $130.7 million and $77.1 million were recorded as of December 31, 2020 and 2019, respectively. See further detail in Note 27, "Derivative Financial Instruments."*

Long-Term Debt. A summary of Long-Term Debt outstanding at December 31, 2020 and 2019 is presented in the following table.

TABLE 94: LONG-TERM DEBT

($ In Millions)	RATE	DECEMBER 31, 2020	2019
Corporation-Subordinated Debt[1]			
Fixed Rate Notes due Oct. 2025[2][3]	3.95 %	**$ 839.8**	$ 798.7
Fixed-to-Floating Rate Notes due May 2032[4]	3.375	**349.5**	349.4
Total Long-Term Debt		**$ 1,189.3**	$ 1,148.1
Long-Term Debt Qualifying as Risk-Based Capital		**$ 949.7**	$ 1,099.5

(1) As of December 31, 2020, debt issuance costs of $1.1 million are included as a direct deduction from the carrying amount and amortized on a straight-line basis over the life of the Note.
(2) Not redeemable prior to maturity.
(3) Interest rate swap contracts were entered into to modify the interest expense from fixed rates to floating rates. The swaps are recorded as fair value hedges and increases in the carrying values of the subordinated notes outstanding of $90.8 million and $49.8 million were recorded as of December 31, 2020 and 2019, respectively. See further detail in Note 27, "Derivative Financial Instruments."
(4) The subordinated notes will bear interest from the date they were issued to, but excluding, May 8, 2027, at an annual rate of 3.375%, payable semi-annually in arrears. From, and including, May 8, 2027, the subordinated notes will bear interest at an annual rate equal to three-month LIBOR plus 1.131%, payable quarterly in arrears. The subordinated notes are unsecured and may be redeemed, in whole but not in part, on, and only on, May 8, 2027, at a redemption price equal to 100% of the principal amount of the subordinated notes to be redeemed, plus accrued and unpaid interest, if any, up to but excluding the redemption date.

Note 14 – Floating Rate Capital Debt

In January 1997, the Corporation issued $150 million of Floating Rate Capital Securities, Series A, through a statutory business trust wholly owned by the Corporation (NTC Capital I). In April 1997, the Corporation also issued, through a separate wholly owned statutory business trust (NTC Capital II), $120 million of Floating Rate Capital Securities, Series B. The sole assets of the trusts are subordinated debentures of Northern Trust Corporation that have the same interest rates and maturity dates as the corresponding distribution rates and redemption dates of the Floating Rate Capital Securities. The Series A securities were issued at a discount to yield 60.5 basis points above the three-month London Interbank Offered Rate (LIBOR) and are due January 15, 2027. The Series B securities were issued at a discount to yield 67.9 basis points above the three-month LIBOR and are due April 15, 2027.

Under the provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the regulatory capital treatment of these securities is required to be phased out over a period that began on January 1, 2013. In 2020, 20% of these securities was eligible for Tier 2 capital treatment, declining at an incremental 10% a year until they are fully phased out in 2022.

The Corporation has fully, irrevocably and unconditionally guaranteed all payments due on the Series A and B securities. The holders of the Series A and B securities are entitled to receive preferential cumulative cash distributions quarterly in arrears (based on the liquidation amount of $1,000 per security) at an interest rate equal to the rate on the corresponding subordinated debentures. The interest rate on the Series A and Series B securities is equal to three-month LIBOR plus 0.52% and 0.59%, respectively. Subject to certain exceptions, the Corporation has the right to defer payment of interest on the subordinated debentures at any time or from time to time for a period not exceeding 20 consecutive quarterly periods provided that no extension period may extend beyond the stated maturity date. If interest is deferred on the subordinated debentures, distributions on the Series A and B securities will also be deferred and the Corporation will not be permitted, subject to certain exceptions, to pay or declare any cash distributions with respect to the Corporation's capital stock or debt securities that rank the same as or junior to the subordinated debentures, until all past due distributions are paid. The subordinated debentures are unsecured and subordinated to substantially all of the Corporation's existing indebtedness.

The Corporation has the right to redeem the Series A and Series B subordinated debentures, in whole or in part, at a price equal to the principal amount plus accrued and unpaid interest. The following table summarizes the book values of the outstanding subordinated debentures as of December 31, 2020 and 2019.

TABLE 95: SUBORDINATED DEBENTURES

(In Millions)	DECEMBER 31, 2020	2019
NTC Capital I Subordinated Debentures due January 15, 2027	**$ 154.3**	$ 154.3
NTC Capital II Subordinated Debentures due April 15, 2027	**123.5**	123.4
Total Subordinated Debentures	**$ 277.8**	$ 277.7

Note 15 – Stockholders' Equity

Preferred Stock. The Corporation is authorized to issue 10 million shares of preferred stock without par value. The Board of Directors is authorized to fix the particular designations, preferences and relative, participating, optional and other special rights and qualifications, limitations or restrictions for each series of preferred stock issued.

As of December 31, 2020, 5,000 shares of Series D Non-Cumulative Perpetual Preferred Stock (the "Series D Preferred Stock") and 16,000 shares of Series E Non-Cumulative Perpetual Preferred Stock (the "Series E Preferred Stock") were outstanding.

Series D Preferred Stock. As of December 31, 2020, the Corporation had issued and outstanding 500,000 depositary shares, each representing a 1/100th ownership interest in a share of Series D Preferred Stock, issued in August 2016. Equity related to Series D Preferred Stock as of December 31, 2020 and 2019 was $493.5 million. Shares of the Series D Preferred Stock have no par value and a liquidation preference of $100,000 (equivalent to $1,000 per depositary share).

Dividends on the Series D Preferred Stock, which are not mandatory, accrue and are payable on the liquidation preference amount, on a non-cumulative basis, at a rate per annum equal to (i) 4.60% from the original issue date of the Series D Preferred Stock to but excluding October 1, 2026; and (ii) a floating rate equal to Three-Month LIBOR plus 3.202% from and including October 1, 2026. Fixed rate dividends are payable in arrears on the first day of April and October of each year, through and including October 1, 2026, and floating rate dividends will be payable in arrears on the first day of January, April, July and October of each year, commencing on January 1, 2027.

The Series D Preferred Stock has no maturity date and is redeemable at the Corporation's option in whole, or in part, on any dividend payment date on or after October 1, 2026. The Series D Preferred Stock is redeemable at the Corporation's option in whole, but not in part, including prior to October 1, 2026, within 90 days of a regulatory capital treatment event, as described in the Series D Preferred Stock Certificate of Designation.

Shares of the Series D Preferred Stock rank senior to the Corporation's common stock, and will rank at least equally with any other series of preferred stock it may issue (except for any senior series that may be issued with the requisite consent of the holders of the Series D Preferred Stock) and all other parity stock, with respect to the payment of dividends and distributions upon liquidation, dissolution or winding up.

Series E Preferred Stock. As of December 31, 2020, the Corporation had issued and outstanding 16 million depositary shares, each representing 1/1,000th ownership interest in a share of Series E Preferred Stock, issued in November 2019. On January 2, 2020, the proceeds from the Series E Preferred Stock were used to fund the redemption of all outstanding shares of the Corporation's Series C Non-Cumulative Perpetual Preferred Stock. Equity related to Series E Preferred Stock as of December 31, 2020 and 2019 was $391.4 million, which represents the net aggregate proceeds from the public offering of the depositary shares. Shares of the Series E Preferred Stock have no par value and a liquidation preference of $25,000 (equivalent to $25 per depositary share).

Dividends on the Series E Preferred Stock, which are not mandatory, accrue and are payable on the liquidation preference amount, on a non-cumulative basis, quarterly in arrears on the first day of January, April, July and October of each year, at a rate per annum equal to 4.70%. On October 20, 2020, the Corporation declared a cash dividend of $293.75 per share of Series E Preferred Stock payable on January 1, 2021, to stockholders of record as of December 15, 2020.

The Series E Preferred Stock has no maturity date and is redeemable at the Corporation's option in whole, or in part, on any dividend payment date on or after January 1, 2025. The Series E Preferred Stock is redeemable at the Corporation's option in whole, but not in part, including prior to January 1, 2025, within 90 days of a regulatory capital treatment event, as described in the Series E Preferred Stock Certificate of Designation.

Shares of the Series E Preferred Stock rank senior to the Corporation's common stock, and will rank at least equally with any other series of preferred stock it may issue (except for any senior series that may be issued with the requisite consent of the holders of the Series E Preferred Stock) and all other parity stock, with respect to the payment of dividends and distributions upon liquidation, dissolution or winding up.

Common Stock. In July 2018, the Board of Directors approved a stock repurchase authorization to repurchase up to 25.0 million shares of the Corporation's common stock. Shares are repurchased by the Corporation to, among other things, manage the Corporation's capital levels. Repurchased shares are used for general purposes, including the issuance of shares under stock option and other incentive plans. The repurchase authorization approved by the Board of Directors has no expiration date. The Corporation suspended this program on March 16, 2020. Subsequent to the Corporation suspending its open-market share repurchase program, the only shares repurchased were shares of common stock withheld upon the vesting of share-based compensation to satisfy tax withholding obligations. During the year ended December 31, 2020, the Corporation repurchased 3,276,589 shares of common stock, including 532,713 shares withheld related to share-based compensation, at a total cost of $299.8 million.

The average price paid per share for common stock repurchased in 2020, 2019, and 2018 was $91.49, $93.40, and $102.69, respectively.

Beginning in the second quarter of 2020, the Federal Reserve announced certain measures to ensure that large financial institutions, including Northern Trust, remain resilient despite the economic uncertainty resulting from the ongoing COVID-19 pandemic. Specifically, for the third and fourth quarters of 2020, no share repurchases were permitted by these institutions and dividend payments were limited to the amount paid in the second quarter and could not exceed the payor's average net income for the four preceding quarters. On December 18, 2020, the Federal Reserve again extended its capital distribution limits into the first quarter of 2021 with certain modifications, which include continuing to limit dividend payments based on recent income and limiting share repurchases based on recent income. During the first quarter of 2021, the Corporation restarted its share repurchase program in accordance with such limitations.

An analysis of changes in the number of shares of common stock outstanding follows:

TABLE 96: SHARES OF COMMON STOCK

	2020	2019	2018
Balance at January 1	**209,709,046**	219,012,050	226,126,674
Incentive Plan and Awards	**1,512,035**	1,688,931	1,310,778
Stock Options Exercised	**344,686**	786,931	575,662
Treasury Stock Purchased	**(3,276,589)**	(11,778,866)	(9,001,064)
Balance at December 31	**208,289,178**	209,709,046	219,012,050

Note 16 – Accumulated Other Comprehensive Income (Loss)

The following tables summarize the components of Accumulated Other Comprehensive Income (Loss) (AOCI) at December 31, 2020, 2019, and 2018, and changes during the years then ended.

TABLE 97: SUMMARY OF CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

(In Millions)	NET UNREALIZED GAINS (LOSSES) ON DEBT SECURITIES AVAILABLE FOR SALE[1]	NET UNREALIZED (LOSSES) GAINS ON CASH FLOW HEDGES	NET FOREIGN CURRENCY ADJUSTMENT	NET PENSION AND OTHER POSTRETIREMENT BENEFIT ADJUSTMENTS	TOTAL
Balance at December 31, 2017	$ (74.8)	$ 4.5	$ (1.8)	$ (342.2)	$ (414.3)
Reclassification of Certain Tax Effects from AOCI	(17.8)	0.9	47.5	(55.9)	(25.3)
Net Change	(22.3)	(1.4)	22.2	(12.6)	(14.1)
Balance at December 31, 2018	$ (114.9)	$ 4.0	$ 67.9	$ (410.7)	$ (453.7)
Net Change	228.9	(7.7)	49.9	(12.1)	259.0
Balance at December 31, 2019	$ 114.0	$ (3.7)	$ 117.8	$ (422.8)	$ (194.7)
Net Change	**527.8**	**0.5**	**26.9**	**67.5**	**622.7**
Balance at December 31, 2020	**$ 641.8**	**$ (3.2)**	**$ 144.7**	**$ (355.3)**	**$ 428.0**

[1] Includes net unrealized gains (losses) on debt securities transferred from available for sale to held to maturity during the years ended December 31, 2020, 2019, and 2018.

TABLE 98: DETAILS OF CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

	FOR THE YEAR ENDED DECEMBER 31,								
	2020			2019			2018		
(In Millions)	**BEFORE TAX**	**TAX EFFECT**	**AFTER TAX**	BEFORE TAX	TAX EFFECT	AFTER TAX	BEFORE TAX	TAX EFFECT	AFTER TAX
Unrealized Gains (Losses) on Debt Securities Available for Sale									
Unrealized Gains (Losses) on Debt Securities Available for Sale	**$ 706.8**	**$ (179.3)**	**$ 527.5**	$ 306.1	$ (78.0)	$ 228.1	$ (31.9)	$ 9.2	$ (22.7)
Reclassification Adjustment for Losses (Gains) Included in Net Income[1]	**0.4**	**(0.1)**	**0.3**	1.1	(0.3)	0.8	0.5	(0.1)	0.4
Net Change	**$ 707.2**	**$ (179.4)**	**$ 527.8**	$ 307.2	$ (78.3)	$ 228.9	$ (31.4)	$ 9.1	$ (22.3)
Unrealized (Losses) Gains on Cash Flow Hedges									
Foreign Exchange Contracts	**$ 28.9**	**$ (7.3)**	**$ 21.6**	$ 14.9	$ (3.7)	$ 11.2	$ 70.5	$ (17.6)	$ 52.9
Interest Rate Contracts	—	—	—	1.5	(0.3)	1.2	(1.2)	0.3	(0.9)
Reclassification Adjustment for (Gains) Losses Included in Net Income[2]	**(28.1)**	**7.0**	**(21.1)**	(26.7)	6.6	(20.1)	(71.1)	17.7	(53.4)
Net Change	**$ 0.8**	**$ (0.3)**	**$ 0.5**	$ (10.3)	$ 2.6	$ (7.7)	$ (1.8)	$ 0.4	$ (1.4)
Foreign Currency Adjustments									
Foreign Currency Translation Adjustments	**$ 169.1**	**$ (8.3)**	**$ 160.8**	$ 6.4	$ (1.6)	$ 4.8	$ (107.8)	$ 1.5	$ (106.3)
Long-Term Intra-Entity Foreign Currency Transaction (Losses) Gains	**2.1**	**(0.5)**	**1.6**	(0.5)	0.1	(0.4)	(1.8)	0.5	(1.3)
Net Investment Hedge Gains (Losses)	**(178.7)**	**43.2**	**(135.5)**	59.7	(14.2)	45.5	173.0	(43.2)	129.8
Net Change	**$ (7.5)**	**$ 34.4**	**$ 26.9**	$ 65.6	$ (15.7)	$ 49.9	$ 63.4	$ (41.2)	$ 22.2
Pension and Other Postretirement Benefit Adjustments									
Net Actuarial (Losses) Gains	**$ 47.4**	**$ (12.3)**	**$ 35.1**	$ (36.8)	$ 7.9	$ (28.9)	$ (54.9)	$ 9.6	$ (45.3)
Reclassification Adjustment for Losses (Gains) Included in Net Income[3]									
Amortization of Net Actuarial Loss	**43.0**	**(10.5)**	**32.5**	22.4	(5.4)	17.0	36.6	(3.6)	33.0
Amortization of Prior Service Cost	**(0.1)**	—	**(0.1)**	(0.2)	—	(0.2)	(0.3)	—	(0.3)
Net Change	**$ 90.3**	**$ (22.8)**	**$ 67.5**	$ (14.6)	$ 2.5	$ (12.1)	$ (18.6)	$ 6.0	$ (12.6)
Total Net Change	**$ 790.8**	**$ (168.1)**	**$ 622.7**	$ 347.9	$ (88.9)	$ 259.0	$ 11.6	$ (25.7)	$ (14.1)

[1] The before-tax reclassification adjustment out of AOCI related to the realized gains (losses) on debt securities available for sale is recorded in Investment Security Gains (Losses), net on the consolidated statements of income.
[2] See Note 27, "Derivative Financial Instruments" for the location of the reclassification adjustment related to cash flow hedges.
[3] The before-tax reclassification adjustment out of AOCI related to pension and other postretirement benefit adjustments is recorded in Employee Benefits expense on the consolidated statements of income.

Note 17 – Net Income per Common Share

The computations of net income per common share are presented in the following table.

TABLE 99: NET INCOME PER COMMON SHARE

	FOR THE YEAR ENDED DECEMBER 31,		
($ In Millions Except Per Common Share Information)	**2020**	2019	2018
BASIC NET INCOME PER COMMON SHARE			
Average Number of Common Shares Outstanding	**208,319,412**	214,525,547	223,148,335
Net Income	**$ 1,209.3**	$ 1,492.2	$ 1,556.4
Less: Dividends on Preferred Stock	**56.2**	46.4	46.4
Net Income Applicable to Common Stock	**1,153.1**	1,445.8	1,510.0
Less: Earnings Allocated to Participating Securities	**12.1**	16.9	20.1
Earnings Allocated to Common Shares Outstanding	**$ 1,141.0**	$ 1,428.9	$ 1,489.9
Basic Net Income Per Common Share	**5.48**	6.66	6.68
DILUTED NET INCOME PER COMMON SHARE			
Average Number of Common Shares Outstanding	**208,319,412**	214,525,547	223,148,335
Plus Dilutive Effect of Share-based Compensation	**688,574**	1,075,602	1,339,991
Average Common and Potential Common Shares	**209,007,986**	215,601,149	224,488,326
Earnings Allocated to Common and Potential Common Shares	**$ 1,141.1**	$ 1,428.9	$ 1,490.0
Diluted Net Income Per Common Share	**5.46**	6.63	6.64

Note: For the years ended December 31, 2020, 2019, and 2018, there were no common stock equivalents excluded in the computation of diluted net income per share.

Note 18 – Revenue from Contracts with Clients

Trust, Investment, and Other Servicing Fees. Custody and fund administration income is comprised of revenues received from our core asset servicing business for providing custody, fund administration, and middle-office-related services, primarily to C&IS clients. Investment management and advisory income contains revenue received from providing asset management and related services to Wealth Management and C&IS clients and to Northern Trust sponsored funds. Securities lending income represents revenues generated from securities lending arrangements that Northern Trust enters into as agent, mainly with C&IS clients. Other income largely consists of revenues received from providing employee benefit, investment risk and analytic and other services to C&IS and Wealth Management clients.

Other Noninterest Income. Treasury management income represents revenues received from providing cash and liquidity management services to C&IS and Wealth Management clients. The portion of Security Commissions and Trading Income that relates to revenue from contracts with clients is primarily comprised of commissions earned from providing securities brokerage services to Wealth Management and C&IS clients. The portion of Other Operating Income that relates to revenue from contracts with clients is mainly comprised of service fees for banking-related services provided to Wealth Management and C&IS clients.

Performance Obligations. Clients are typically charged monthly or quarterly in arrears based on the fee arrangement agreed to with each client; payment terms will vary depending on the client and services offered.

Substantially all revenues generated from contracts with clients for asset servicing, asset management, securities lending, treasury management and banking-related services are recognized on an accrual basis, over the period in which services are provided. The nature of Northern Trust's performance obligations is to provide a series of distinct services in which the customer simultaneously receives and consumes the benefits of the promised services as they are performed. Fee arrangements are mainly comprised of variable amounts based on market value of client assets managed and serviced, transaction volumes, number of accounts, and securities lending volume and spreads. Revenue is recognized using the output method in an amount that reflects the consideration to which Northern Trust expects to be entitled in exchange for providing each month or quarter of service. For contracts with multiple performance obligations, revenue is allocated to each performance obligation based on the price agreed to with the client, representing its relative standalone selling price.

Security brokerage revenue is primarily represented by securities commissions received in exchange of providing trade execution related services. Control is transferred at a point in time, on the trade date of the transaction, and fees are typically variable based on transaction volumes and security types.

Northern Trust's contracts with its clients are typically open-ended arrangements and are therefore considered to have an original duration of less than one year. Northern Trust has elected the practical expedient to not disclose the value of remaining performance obligations for contracts with an original expected duration of one year or less.

The following table presents revenues disaggregated by major revenue source.

TABLE 100: REVENUE DISAGGREGATION

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	**2020**	2019	2018
Noninterest Income			
Trust, Investment and Other Servicing Fees			
Custody and Fund Administration	**$ 1,674.3**	$ 1,636.4	$ 1,589.1
Investment Management and Advisory	**2,029.3**	1,930.6	1,862.6
Securities Lending	**88.3**	87.7	102.8
Other	**203.1**	197.4	199.2
Total Trust, Investment and Other Servicing Fees	**$ 3,995.0**	$ 3,852.1	$ 3,753.7
Other Noninterest Income			
Foreign Exchange Trading Income	**$ 290.4**	$ 250.9	$ 307.2
Treasury Management Fees	**45.4**	44.5	51.8
Security Commissions and Trading Income	**133.2**	103.6	98.3
Other Operating Income	**194.0**	145.5	127.5
Investment Security Gains (Losses), net	**(0.4)**	(1.4)	(1.0)
Total Other Noninterest Income	**$ 662.6**	$ 543.1	$ 583.8
Total Noninterest Income	**$ 4,657.6**	$ 4,395.2	$ 4,337.5

On the consolidated statements of income, Trust, Investment and Other Servicing Fees and Treasury Management Fees represent revenue from contracts with clients. For the year ended December 31, 2020, revenue from contracts with clients also includes $102.4 million of the $133.2 million total Security Commissions and Trading Income and $42.8 million of the $194.0 million total Other Operating Income. For the year ended December 31, 2019, revenue from contracts with clients also includes $87.1 million of the $103.6 million total Security Commissions and Trading Income and $41.8 million of the $145.5 million total Other Operating Income. For the year ended December 31, 2018, revenue from contracts with clients also includes $86.7 million of the $98.3 million total Security Commissions and Trading Income and $44.0 million of the $127.5 million total Other Operating Income.

Receivables Balances. The following table represents receivables balances from contracts with clients, which are included in Other Assets on the consolidated balance sheets, at December 31, 2020 and 2019.

TABLE 101: CLIENT RECEIVABLES

	DECEMBER 31,	
(In Millions)	**2020**	2019
Trust Fees Receivable, net[1]	**$ 819.3**	$ 801.9
Other	**116.5**	101.1
Total Client Receivables	**$ 935.8**	$ 903.0

[1] *Trust Fees Receivable is net of a $7.2 million and $5.6 million fee receivable allowance as of December 31, 2020 and 2019, respectively.*

Note 19 – Net Interest Income

The components of Net Interest Income were as follows:

TABLE 102: NET INTEREST INCOME

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
Interest Income			
Loans and Leases	**$ 774.6**	$ 1,153.4	$ 1,098.8
Securities – Taxable	**812.4**	1,070.7	905.2
– Non-Taxable[1]	**1.4**	3.8	7.0
Interest-Bearing Due from and Deposits with Banks[2]	**22.4**	72.4	70.0
Federal Reserve and Other Central Bank Deposits and Other	**32.7**	199.6	240.4
Total Interest Income	**$ 1,643.5**	$ 2,499.9	$ 2,321.4
Interest Expense			
Deposits	**$ 48.4**	$ 488.9	$ 384.6
Federal Funds Purchased	**2.2**	25.9	50.3
Securities Sold under Agreements to Repurchase	**1.0**	6.4	7.8
Other Borrowings	**45.3**	181.7	150.1
Senior Notes	**72.7**	72.6	53.4
Long-Term Debt	**26.5**	38.3	45.0
Floating Rate Capital Debt	**4.2**	8.2	7.5
Total Interest Expense	**$ 200.3**	$ 822.0	$ 698.7
Net Interest Income	**$ 1,443.2**	$ 1,677.9	$ 1,622.7

[1] Non-Taxable Securities represent securities that are exempt from U.S. federal income taxes.
[2] Interest-Bearing Due from and Deposits with Banks includes the interest-bearing component of Cash and Due from Banks and Interest-Bearing Deposits with Banks as presented on the consolidated balance sheets.

Note 20 – Other Operating Income

The components of Other Operating Income were as follows:

TABLE 103: OTHER OPERATING INCOME

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
Loan Service Fees	**$ 52.5**	$ 48.0	$ 48.9
Banking Service Fees	**46.1**	45.6	46.4
Other Income	**95.4**	51.9	32.2
Total Other Operating Income	**$ 194.0**	$ 145.5	$ 127.5

Other Operating Income in 2020 increased from 2019, primarily due to higher income related to a bank-owned life insurance program implemented during 2019, a charge in the prior year related to the decision made to sell substantially all of the lease portfolio, and higher miscellaneous income.

Note 21 – Other Operating Expense

The components of Other Operating Expense were as follows:

TABLE 104: OTHER OPERATING EXPENSE

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	**2020**	2019	2018
Business Promotion	**$ 59.2**	$ 104.2	$ 98.3
Staff Related	**29.4**	42.8	33.6
FDIC Insurance Premiums	**11.8**	9.9	27.4
Other Intangibles Amortization	**16.9**	16.6	17.4
Other Expenses	**229.4**	156.3	153.9
Total Other Operating Expense	**$ 346.7**	$ 329.8	$ 330.6

Other Operating Expense in 2020 increased from 2019 primarily due to a $43.4 million charge related to a corporate action processing error as well as increases in mutual fund co-administration fees, partially offset by lower business promotion expense due to reduced business travel and lower staff-related expense.

Note 22 – Income Taxes

The following table reconciles the statutory federal tax rate with the effective tax rate for the periods presented below.

TABLE 105: INCOME TAXES

	FOR THE YEAR ENDED DECEMBER 31,		
	2020	2019	2018
Statutory Federal Tax Rate	**21.0 %**	21.0 %	21.0 %
Tax Exempt Income	**(0.9)**	(0.6)	(0.4)
Foreign Tax Rate Differential	**0.7**	0.2	(0.4)
Excess Tax Benefit Related to Share-Based Compensation	**(0.6)**	(0.9)	(0.9)
Tax Credits	**(1.7)**	(1.0)	(1.1)
Reversal of Tax Benefits Previously Recognized through Earnings	**1.6**	—	—
State Taxes, net	**3.2**	2.8	3.4
Impact of Tax Cuts and Jobs Act	**—**	—	(0.2)
Change in Accounting Method	**—**	—	(1.2)
Valuation Allowance	**1.6**	1.5	—
Other	**0.8**	0.2	0.3
Effective Tax Rate	**25.7 %**	23.2 %	20.5 %

Income tax expense for the year ended December 31, 2020 and 2019 was $418.3 million and $451.9 million, representing an effective tax rate of 25.7% and 23.2%, respectively. For the year ended December 31, 2020, the increase in the effective tax rate was primarily driven by $26.8 million of tax expense related to the reversal of tax benefits previously recognized through earnings and higher taxes payable on the income of the Corporation's non-U.S. branches.

For the year ended December 31, 2019, the provision for income taxes included an increase in the U.S. taxes payable on the income of the Corporation's non-U.S. branches. This increase included a valuation allowance against deferred tax assets as management believes the foreign tax credit carryforward generated in 2019 will not be fully realized.

For the year ended December 31, 2018, the provision for income taxes included income tax benefits recorded in 2018 associated with the timing of tax deductions for software development-related expenses and the implementation of the Tax Cuts and Jobs Act (TCJA) enacted in the fourth quarter of 2017, partially offset by a change in the earnings mix in tax jurisdictions in which the Corporation operates.

For tax years beginning after December 31, 2017, the TCJA introduces new provisions for U.S. taxation of certain Global Intangible Low-Taxed Income (GILTI). Northern Trust has made the policy election to record any current year tax expense associated with GILTI in the period in which it is incurred.

The Corporation files income tax returns in the U.S. federal, various state, and foreign jurisdictions. The Corporation is no longer subject to income tax examinations by U.S. federal authorities before 2013, U.S. state or local tax authorities for years before 2011, or non-U.S. tax authorities for years before 2013.

Included in Other Liabilities on the consolidated balance sheets at December 31, 2020 and 2019 were $22.4 million and $25.3 million of unrecognized tax benefits, respectively. If recognized, the amounts would reduce 2020 and 2019 income tax expense by $20.7 million and $22.7 million, respectively. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows.

TABLE 106: UNRECOGNIZED TAX BENEFITS

(In Millions)	2020	2019	2018
Balance at January 1	**$ 25.3**	$ 21.9	$ 27.7
Additions for Tax Positions Taken in the Current Year	**0.9**	0.9	0.5
Additions for Tax Positions Taken in Prior Years	**0.4**	4.0	1.7
Reductions for Tax Positions Taken in Prior Years	**(4.2)**	(1.5)	(7.8)
Reductions Resulting from Expiration of Statutes	**—**	—	(0.2)
Balance at December 31	**$ 22.4**	$ 25.3	$ 21.9

It is possible that changes in the amount of unrecognized tax benefits could occur in the next 12 months due to changes in judgment related to recognition or measurement, settlements with taxing authorities, or expiration of statute of limitations. Management does not believe that future changes, if any, would have a material effect on the consolidated financial position or liquidity of Northern Trust, although they could have a material effect on operating results for a particular period.

A provision for interest and penalties of $1.2 million, net of tax, was included in the Provision for Income Taxes for the year ended December 31, 2020. This compares to a benefit for interest and penalties of $1.3 million, net of tax, and a provision of $0.3 million, net of tax, for the year ended December 31, 2019 and 2018, respectively. As of December 31, 2020 and 2019, the liability for the potential payment of interest and penalties totaled $9.6 million and $8.4 million, net of tax, respectively.

The components of the consolidated Provision for Income Taxes for each of the three years ended December 31 are as follows.

TABLE 107: PROVISION FOR INCOME TAXES

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	2020	2019	2018
Current Tax Provision:			
Federal	**$ 203.0**	$ 216.4	$ 132.8
State	**57.2**	50.7	95.4
Non-U.S.	**141.7**	150.5	162.7
Total	**$ 401.9**	$ 417.6	$ 390.9
Deferred Tax Provision:			
Federal	**$ 8.8**	$ 16.5	$ 33.8
State	**5.4**	16.5	(13.8)
Non-U.S.	**2.2**	1.3	(9.5)
Total	**$ 16.4**	$ 34.3	$ 10.5
Provision for Income Taxes	**$ 418.3**	$ 451.9	$ 401.4

In addition to the amounts shown above, tax charges and benefits have been recorded directly to Stockholders' Equity for the following.

TABLE 108: TAX CHARGES AND BENEFITS RECORDED DIRECTLY TO STOCKHOLDERS' EQUITY

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	2020	2019	2018
Tax Effect of Other Comprehensive Income	**$ 168.1**	$ 88.9	$ 25.7

Deferred taxes result from temporary differences between the amounts reported on the consolidated financial statements and the tax bases of assets and liabilities. Deferred tax assets and liabilities have been computed as follows.

TABLE 109: NET DEFERRED TAX LIABILITIES

	DECEMBER 31,	
(In Millions)	**2020**	2019
Deferred Tax Liabilities:		
Lease Financing	**$ 9.0**	$ 36.9
Software Development	**268.1**	249.4
Accumulated Depreciation	**99.7**	99.8
Compensation and Benefits	**31.0**	8.3
State Taxes, net	**67.4**	66.4
Other Liabilities	**372.6**	206.7
Gross Deferred Tax Liabilities	**847.8**	667.5
Deferred Tax Assets:		
Allowance for Credit Losses	**54.5**	26.1
Other Assets	**139.8**	147.0
Gross Deferred Tax Assets	**194.3**	173.1
Valuation Reserve	**(55.2)**	(29.8)
Deferred Tax Assets, net of Valuation Reserve	**139.1**	143.3
Net Deferred Tax Liabilities	**$ 708.7**	$ 524.2

Northern Trust had various state net operating loss carryforwards as of December 31, 2020 and 2019. The income tax benefits associated with these loss carryforwards were approximately $0.5 million as of December 31, 2020 and $1.0 million as of December 31, 2019. A valuation allowance related to the loss carryforwards of $0.5 million and $0.3 million was recorded at December 31, 2020 and 2019, respectively, as management believes the net operating losses will not be fully realized.

The Corporation generated a foreign tax credit carryforward during the years ended December 31, 2020 and 2019, expiring in 2030 and 2029, respectively. A valuation allowance related to the credit carryforward of $25.3 million and $29.5 million was recorded at December 31, 2020 and 2019, respectively, as management believes the foreign tax credit carryforwards will not be fully realized.

Note 23 – Employee Benefits

The Corporation and certain of its subsidiaries provide various benefit programs, including defined benefit pension, postretirement health care, and defined contribution plans. A description of each major plan and related disclosures are provided below.

Pension. A noncontributory qualified defined benefit pension plan covers substantially all U.S. employees of Northern Trust. Employees of certain European subsidiaries retain benefits in local defined benefit plans, although those plans are closed to new participants and to future benefit accruals. Employees continue to accrue benefits under the Swiss pension plan, which is accounted for as a defined benefit plan under U.S. GAAP.

Northern Trust also maintains a noncontributory supplemental pension plan for participants whose retirement benefits under the U.S. Qualified Plan are expected to exceed the limits imposed by federal tax law. Northern Trust has a nonqualified trust, referred to as a “Rabbi” Trust, used to hold assets designated for the funding of benefits in excess of those permitted in certain of its qualified retirement plans. This arrangement offers participants a degree of assurance for payment of benefits in excess of those permitted in the related qualified plans. As the “Rabbi” Trust assets remain subject to the claims of creditors and are not the property of the employees, they are accounted for as corporate assets and are included in Other Assets on the consolidated balance sheets. Total assets in the “Rabbi” Trust related to the nonqualified pension plan at December 31, 2020 and 2019 amounted to $137.5 million and $128.8 million, respectively. Contributions of $10.6 million and $3.0 million were made to the “Rabbi” Trust in 2020 and 2019, respectively.

The following tables set forth the status, amounts included in AOCI, and net periodic pension expense of the U.S. Qualified Plan, Non-U.S. Pension Plans, and U.S. Non-Qualified Plan for 2020, 2019, and 2018. Prior service costs are being amortized on a straight-line basis over 11 years for the U.S. Qualified Plan and 10 years for the U.S. Non-Qualified Plan of which approximately one year was remaining as of December 31, 2020 for both the U.S. Qualified Plan and the U.S. Non-Qualified Plan.

TABLE 110: EMPLOYEE BENEFIT PLAN STATUS

	U.S. QUALIFIED PLAN		NON-U.S. PENSION PLANS		U.S. NON-QUALIFIED PLAN	
($ In Millions)	**2020**	2019	**2020**	2019	**2020**	2019
Accumulated Benefit Obligation	**$ 1,312.9**	$ 1,181.9	**$ 228.5**	$ 204.7	**$ 139.8**	$ 131.5
Projected Benefit Obligation	**$ 1,470.6**	$ 1,323.4	**$ 236.1**	$ 211.1	**$ 162.3**	$ 149.2
Plan Assets at Fair Value	**1,793.7**	1,601.2	**211.5**	190.1	**—**	—
Funded Status at December 31	**$ 323.1**	$ 277.8	**$ (24.6)**	$ (21.0)	**$ (162.3)**	$ (149.2)
Weighted-Average Assumptions:						
Discount Rates	**2.75 %**	3.37 %	**0.93 %**	1.40 %	**2.45 %**	3.37 %
Rate of Increase in Compensation Level	**4.97**	4.97	**1.50**	1.50	**4.97**	4.97
Expected Long-Term Rate of Return on Assets	**5.25**	5.25	**1.28**	1.72	**N/A**	N/A

TABLE 111: AMOUNTS INCLUDED IN ACCUMULATED OTHER COMPREHENSIVE INCOME

	U.S. QUALIFIED PLAN		NON-U.S. PENSION PLANS		U.S. NON-QUALIFIED PLAN	
(In Millions)	**2020**	2019	**2020**	2019	**2020**	2019
Net Actuarial Loss	**$ 332.4**	$ 426.7	**$ 49.0**	$ 46.5	**$ 96.3**	$ 82.5
Prior Service (Benefit) Cost	**(0.6)**	(1.0)	**2.2**	3.0	**0.1**	0.2
Gross Amount in Accumulated Other Comprehensive Income	**331.8**	425.7	**51.2**	49.5	**96.4**	82.7
Income Tax Effect	**82.1**	105.7	**6.4**	6.2	**23.9**	20.4
Net Amount in Accumulated Other Comprehensive Income	**$ 249.7**	$ 320.0	**$ 44.8**	$ 43.3	**$ 72.5**	$ 62.3

TABLE 112: NET PERIODIC PENSION EXPENSE

	U.S. QUALIFIED PLAN			NON-U.S. PENSION PLANS			U.S. NON-QUALIFIED PLAN		
($ In Millions)	**2020**	2019	2018	**2020**	2019	2018	**2020**	2019	2018
Service Cost	**$ 47.4**	$ 41.6	$ 41.4	**$ 1.9**	$ 2.0	$ 1.7	**$ 4.6**	$ 4.1	$ 4.3
Interest Cost	**43.3**	47.2	44.3	**2.9**	3.9	4.0	**4.8**	5.8	5.3
Expected Return on Plan Assets	**(76.8)**	(86.9)	(88.2)	**(3.1)**	(4.4)	(4.4)	**—**	—	N/A
Settlement Expense	**—**	—	—	**0.8**	—	0.5	**—**	—	—
Amortization:									
Net Actuarial Loss	**35.0**	17.2	28.2	**0.8**	0.6	0.9	**7.0**	5.6	7.4
Prior Service (Benefit) Cost	**(0.4)**	(0.4)	(0.4)	**0.4**	0.3	0.2	**0.2**	0.2	0.2
Net Periodic Pension Expense	**$ 48.5**	$ 18.7	$ 25.3	**$ 3.7**	$ 2.4	$ 2.9	**$ 16.6**	$ 15.7	$ 17.2
Weighted-Average Assumptions:									
Discount Rates	**3.37 %**	4.47 %	3.79 %	**1.40 %**	2.16 %	2.08 %	**3.37 %**	4.47 %	3.79 %
Rate of Increase in Compensation Level	**4.97**	4.39	4.39	**1.50**	1.75	1.75	**4.97**	4.39	4.39
Expected Long-Term Rate of Return on Assets	**5.25**	6.00	6.00	**1.72**	2.39	2.61	**N/A**	N/A	N/A

The components of net periodic pension expense are included in Employee Benefits expense on the consolidated statements of income.

TABLE 113: CHANGE IN PROJECTED BENEFIT OBLIGATION

	U.S. QUALIFIED PLAN		NON-U.S. PENSION PLANS		U.S. NON-QUALIFIED PLAN	
(In Millions)	**2020**	2019	**2020**	2019	**2020**	2019
Beginning Balance	**$ 1,323.4**	$ 1,092.0	**$ 211.1**	$ 183.5	**$ 149.2**	$ 135.6
Service Cost	**47.4**	41.6	**1.9**	2.0	**4.6**	4.1
Interest Cost	**43.3**	47.2	**2.9**	3.9	**4.8**	5.8
Employee Contributions	**—**	—	**0.6**	0.6	**—**	—
Plan Amendment	**—**	—	**(0.5)**	(0.4)	**—**	—
Actuarial Loss (Gain)	**136.5**	213.3	**19.1**	20.9	**20.4**	22.0
Settlement	**—**	—	**(5.4)**	—	**—**	—
Benefits Paid	**(80.0)**	(70.7)	**(4.1)**	(3.6)	**(16.7)**	(18.3)
Foreign Exchange Rate Changes	**—**	—	**10.5**	4.2	**—**	—
Ending Balance	**$ 1,470.6**	$ 1,323.4	**$ 236.1**	$ 211.1	**$ 162.3**	$ 149.2

Actuarial losses of $176.0 million and $256.2 million in 2020 and 2019, respectively, were primarily caused by decreases in discount rates.

TABLE 114: ESTIMATED FUTURE BENEFIT PAYMENTS

(In Millions)	U.S. QUALIFIED PLAN	NON-U.S.PENSION PLANS	U.S. NON-QUALIFIED PLAN
2021	$ 86.8	$ 4.4	$ 18.0
2022	88.9	4.3	20.0
2023	96.3	4.8	18.2
2024	96.4	5.0	11.6
2025	98.6	5.0	12.7
2026-2030	495.5	32.4	62.0

TABLE 115: CHANGE IN PLAN ASSETS

	U.S. QUALIFIED PLAN		NON-U.S PENSION PLANS	
(In Millions)	**2020**	2019	**2020**	2019
Fair Value of Assets at Beginning of Period	**$ 1,601.2**	$ 1,380.1	**$ 190.1**	$ 166.7
Actual Return on Assets	**272.5**	291.8	**17.9**	18.6
Employer Contributions	**—**	—	**5.0**	3.1
Employee Contributions	**—**	—	**0.6**	0.6
Settlement	**—**	—	**(5.4)**	—
Benefits Paid	**(80.0)**	(70.7)	**(4.1)**	(3.6)
Foreign Exchange Rate Changes	**—**	—	**7.4**	4.7
Fair Value of Assets at End of Period	**$ 1,793.7**	$ 1,601.2	**$ 211.5**	$ 190.1

The minimum required and maximum remaining deductible contributions for the U.S. Qualified Plan in 2021 are estimated to be zero and $255.0 million, respectively.

During 2017, the investment strategy employed for Northern Trust's U.S. Qualified Plan was changed to utilize a dynamic glide path based on a set of pre-approved asset allocations to return-seeking and liability-hedging assets that vary in accordance with the U.S. Qualified Plan's projected benefit obligation funded ratio. In 2020, the glide path was adjusted to allow for a greater component of return-seeking investments.

In general, as the U.S. Qualified Plan's projected benefit obligation funded ratio increases beyond an established threshold, the U.S. Qualified Plan's allocation to liability-hedging assets will increase while the allocation to return-seeking assets will decrease. Conversely, a decrease in the U.S. Qualified Plan's projected benefit obligation funded ratio beyond an established threshold will result in a decrease in the U.S. Qualified Plan's allocation to liability-hedging assets and increase in the allocation to return-seeking assets. Liability-hedging assets include U.S. long credit bonds, U.S. long government bonds, and a custom completion strategy used to hedge more closely the liability duration of projected plan benefits with bond duration across all durations. Return-seeking assets include: U.S. equity, international developed equity, emerging markets equity, real estate, high yield bonds, global listed infrastructure, emerging market debt, private equity and hedge funds.

Northern Trust utilizes an asset/liability methodology to determine the investment policies that will best meet its short and long-term objectives. The process is performed by modeling current and alternative strategies for asset allocation, funding policy and actuarial methods and assumptions. The financial modeling uses projections of expected capital market returns and expected volatility of those returns to determine alternative asset mixes having the greatest probability of meeting the U.S. Qualified Plan's investment objectives. Risk tolerance is established through careful consideration of the U.S. Qualified Plan liabilities, funded status, and corporate financial condition. The intent of this strategy is to protect the U.S. Qualified Plan's healthy funded status and generate returns, which in combination with minimal voluntary contributions are expected to outpace the U.S. Qualified Plan's liability growth over the long run.

The target allocation of the U.S. Qualified Plan assets had been adjusted in August 2020 and consists of 45% U.S. long credit bonds, 20% global equities (developed and emerging markets), 10% custom completion, 5% high yield bonds, 5% private equity, 4% emerging market debt, 4% global listed infrastructure, 4% private real estate, and 3% hedge funds.

Global equity investments include common stocks that are listed on an exchange and investments in commingled funds that invest primarily in publicly traded equities. Equity investments are diversified across U.S. and non-U.S. stocks and divided by investment style and market capitalization. Fixed income securities held include U.S. treasury securities, corporate bonds, and investments in commingled funds that invest in a diversified blend of longer duration fixed income securities; the custom completion strategy uses U.S. treasury securities and interest rate futures (or similar instruments) to align more closely with the target hedge ratio across maturities. Diversifying investments, including private equity, hedge funds, private real estate, emerging market debt, high yield bonds, and global listed infrastructure, are used judiciously to enhance long-term returns while improving portfolio diversification. Private equity assets consist primarily of investments in limited partnerships that invest in individual companies in the form of non-public equity or non-public debt positions. Direct or co-investment in non-public stock by the U.S. Qualified Plan is prohibited. The U.S. Qualified Plan's private equity investments are limited to 20% of each of the total limited partnership or fund of funds and the maximum allowable loss cannot exceed the commitment amount. The U.S. Qualified Plan invests in one hedge fund of funds, which invests, either directly or indirectly, in diversified portfolios of funds or other pooled investment vehicles.

Investments in private real estate, high yield bonds, emerging market debt, and global listed infrastructure are designed to provide income and added diversification.

Derivatives may be used, depending on the nature of the asset class to which they relate, to gain market exposure in an efficient and timely manner, to hedge foreign currency exposure or interest rate risk, or to alter the duration of a portfolio. There were five derivatives held by the U.S. Qualified Plan at December 31, 2020 and 2019.

Investment risk is measured and monitored on an ongoing basis through monthly liability measurements, periodic asset/liability studies, and quarterly investment portfolio reviews. Standards used to evaluate the U.S. Qualified Plan's investment manager performance include, but are not limited to, the achievement of objectives, operation within guidelines and policy, and comparison against a relative benchmark. In addition, each manager of the investment funds held by the U.S. Qualified Plan is ranked against a universe of peers and compared to a relative benchmark. Total U.S. Qualified Plan performance analysis includes an analysis of the market environment, asset allocation impact on performance, risk and return relative to other ERISA plans, and manager impacts upon U.S. Qualified Plan performance.

The following describes the hierarchy of inputs used to measure fair value and the primary valuation methodologies used by Northern Trust for the U.S. Qualified Plan assets measured at fair value.

Level 1 – Quoted, active market prices for identical assets or liabilities. The U.S. Qualified Plan's Level 1 assets are comprised of a mutual fund and domestic common stocks. The U.S. Qualified Plan's Level 1 investments that are exchange traded are valued at the closing price reported by the respective exchanges on the day of valuation.

Level 2 – Observable inputs other than Level 1 prices, such as quoted active market prices for similar assets or liabilities, quoted prices for identical or similar assets in inactive markets, and model-derived valuations in which all significant inputs are observable in active markets. The U.S. Qualified Plan's Level 2 assets are comprised of U.S. government obligations and collective trust funds. The investments in collective trust funds fair values are calculated on a scheduled basis using the closing market prices and accruals of securities in the funds (total value of the funds) divided by the number of fund shares currently issued and outstanding. Redemptions of the collective trust funds occur by contract at the respective fund's redemption date net asset value (NAV).

Level 3 – Valuation techniques in which one or more significant inputs are unobservable in the marketplace. The U.S. Qualified Plan did not hold Level 3 assets as of December 31, 2020 and 2019.

Assets valued at fair value using NAV per share - The U.S. Qualified Plan's assets valued at fair value using NAV per share include investments in private equity funds and a hedge fund, which invest in underlying groups of investment funds or other pooled investment vehicles that are selected by the respective funds' investment managers. The investment funds and the underlying investments held by these investment funds are valued at fair value. In determining the fair value of the underlying investments of each fund, the fund's investment manager or general partner takes into account the estimated value reported by the underlying funds as well as any other considerations that may, in their judgment, increase or decrease such estimated value. The investments in the private equity funds and a hedge fund are considered to be long-term investments. There are no capital withdrawal options related to the investments in the private equity funds. However, capital is occasionally distributed as underlying investments are sold. It is estimated that the current private equity investments would be liquidated over 1 year to 8 years. The Plan's investment in the hedge fund can be withdrawn quarterly, after a sixty days notice period.

The U.S. Qualified Plan's assets valued at fair value using NAV per share also include investments in real estate funds, which invest in real estate assets. The investment in properties by the real estate funds are carried at fair value, which is estimated based on the price that would be received to sell an asset in an orderly transaction between marketplace participants at the measurement date. The valuation plan for each real estate investment is subject to review on an annual basis which is based on either an external appraisal from appraisal firms or internal valuations prepared by the real estate fund's investment advisor. The Plan's investment in real estate funds are considered to be long-term investments and can be withdrawn quarterly to the extent the real estate funds have liquid assets, after a forty-five days notice period.

As investments in the private equity funds, hedge fund, and real estate fund are valued at fair value using NAV per share, they are not required to be categorized within the fair value hierarchy.

While Northern Trust believes its valuation methods for U.S. Qualified Plan assets are appropriate and consistent with other market participants, the use of different methodologies or assumptions could have a material effect on the computation of the estimated fair values.

The following table presents the fair values of Northern Trust's U.S. Qualified Plan assets, by major asset category, and their level within the fair value hierarchy defined by GAAP as of December 31, 2020 and 2019.

TABLE 116: FAIR VALUE OF U.S. QUALIFIED PLAN ASSETS

	DECEMBER 31, 2020			
(In Millions)	**LEVEL 1**	**LEVEL 2**	**LEVEL 3**	**TOTAL**
Domestic Common Stock	**$ 13.5**	**$ —**	**$ —**	**$ 13.5**
Domestic Corporate Bonds	**—**	**314.4**	**—**	**314.4**
Foreign Corporate Bonds	**—**	**43.6**	**—**	**43.6**
U.S. Government Obligations	**2.9**	**113.1**	**—**	**116.0**
Non-U.S. Government Obligations	**—**	**22.9**	**—**	**22.9**
Domestic Municipal and Provincial Bonds	**—**	**22.4**	**—**	**22.4**
Foreign Municipal and Provincial Bonds	**—**	**0.3**	**—**	**0.3**
Collective Trust Funds	**—**	**985.5**	**—**	**985.5**
Mutual Funds	**167.0**	**—**	**—**	**167.0**
Cash and Other	**7.5**	**—**	**—**	**7.5**
Total Assets at Fair Value in the Fair Value Hierarchy	**$ 190.9**	**$ 1,502.2**	**$ —**	**$ 1,693.1**
Assets Valued at NAV per share				
Northern Trust Private Equity Funds				**20.3**
Northern Trust Hedge Fund				**34.2**
Real Estate Funds				**46.1**
Total Assets at Fair Value				**$ 1,793.7**

	DECEMBER 31, 2019			
(In Millions)	LEVEL 1	LEVEL 2	LEVEL 3	TOTAL
Domestic Common Stock	$ 12.3	$ —	$ —	$ 12.3
Domestic Corporate Bonds	—	254.6	—	254.6
Foreign Corporate Bonds	—	45.0	—	45.0
U.S. Government Obligations	—	168.3	—	168.3
Non-U.S. Government Obligations	—	18.8	—	18.8
Domestic Municipal and Provincial Bonds	—	23.1	—	23.1
Foreign Municipal and Provincial Bonds	—	0.3	—	0.3
Collective Trust Funds	—	866.6	—	866.6
Mutual Funds	112.8	—	—	112.8
Cash and Other	2.6	—	—	2.6
Total Assets at Fair Value in the Fair Value Hierarchy	$ 127.7	$ 1,376.7	$ —	$ 1,504.4
Assets Valued at NAV per share				
Northern Trust Private Equity Funds				20.3
Northern Trust Hedge Fund				30.2
Real Estate Funds				46.3
Total Assets at Fair Value				$ 1,601.2

A building block approach is employed for Northern Trust's U.S. Qualified Plan in determining the long-term rate of return for plan assets. Historical markets and long-term historical relationships between equities, fixed income and other asset classes are studied using the widely accepted capital market principle that assets with higher volatility generate a greater return over the long-run. Current market factors such as inflation expectations and interest rates are evaluated before long-term capital market assumptions are determined. The long-term portfolio rate of return is established with consideration given to diversification and rebalancing. The rate is reviewed against peer data and historical returns to verify the return is reasonable and appropriate. Based on this approach and the U.S. Qualified Plan's target asset allocation, the expected long-term rate of return on assets as of the U.S. Qualified Plan's December 31, 2020 measurement date was set at 5.25%.

Postretirement Health Care. Northern Trust maintains an unfunded postretirement health care plan under which those employees who retire at age 55 or older under the provisions of the U.S. defined benefit plan and had attained 15 years of service as of December 31, 2011 may be eligible for subsidized postretirement health care coverage. The provisions of this health care plan may be changed further at the discretion of Northern Trust, which also reserves the right to terminate these benefits at any time.

Northern Trust changed the plan design of its post-retirement health care plan as of January 1, 2021, which resulted in the recognition of negative prior-service cost of $12.7 million at the time these changes were communicated to participants in August 2020. Concurrently, a further shift in population from active to inactive participants required an adjustment to the amortization period from the average remaining service period of active participants to the average life expectancy of the inactive participants. The change in plan design and amortization period resulted in a decrease of the benefit obligation and 2020 benefit expense at the time of recognition by $12.6 million and $0.3 million, respectively. Negative prior service costs are being amortized on a straight-line basis over 13.9 years.

The following tables set forth the postretirement health care plan status and amounts included in AOCI at December 31, 2020 and 2019, the net periodic postretirement benefit cost of the plan for 2020 and 2019, and the change in the accumulated postretirement benefit obligation during 2020 and 2019.

TABLE 117: POSTRETIREMENT HEALTH CARE PLAN STATUS

	DECEMBER 31,	
(In Millions)	**2020**	2019
Accumulated Postretirement Benefit Obligation at Measurement Date:		
Retirees and Dependents	**$ 13.2**	$ 25.2
Actives Eligible for Benefits	**2.5**	3.6
Net Postretirement Benefit Obligation	**$ 15.7**	$ 28.8

TABLE 118: AMOUNTS INCLUDED IN ACCUMULATED OTHER COMPREHENSIVE INCOME

	DECEMBER 31,	
(In Millions)	**2020**	2019
Net Actuarial (Gain) Loss	**$ (4.9)**	$ (5.4)
Prior Service Cost	**(12.4)**	—
Gross Amount in Accumulated Other Comprehensive Income	**(17.3)**	(5.4)
Income Tax Effect	**(4.3)**	(1.4)
Net Amount in Accumulated Other Comprehensive Income	**$ (13.0)**	$ (4.0)

TABLE 119: NET PERIODIC POSTRETIREMENT EXPENSE (BENEFIT)

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	**2020**	2019	2018
Service Cost	**$ —**	$ —	$ —
Interest Cost	**0.7**	1.2	1.3
Expected Return on Plan Assets	**—**	—	—
Amortization			
Net Gain	**(0.6)**	(1.1)	—
Prior Service Benefit	**(0.3)**	—	—
Net Periodic Postretirement Expense	**$ (0.2)**	$ 0.1	$ 1.3

TABLE 120: CHANGE IN ACCUMULATED POSTRETIREMENT BENEFIT OBLIGATION

	FOR THE YEAR ENDED DECEMBER 31,	
(In Millions)	**2020**	2019
Beginning Balance	**$ 28.8**	$ 28.1
Service Cost	**—**	—
Interest Cost	**0.7**	1.2
Plan Amendment	**(12.7)**	—
Actuarial Loss (Gain)	**(0.1)**	0.2
Net Claims Paid	**(1.0)**	(0.7)
Ending Balance	**$ 15.7**	$ 28.8

Northern Trust uses the aggregate Pri-2012 mortality table with a 2012 base year and proposed future improvements under scale MP-2020, as released by the Society of Actuaries in October 2020. The assumption for future mortality improvements was updated at December 31, 2020 from the prior year's improvement scale MP-2019.

TABLE 121: ESTIMATED FUTURE BENEFIT PAYMENTS

(In Millions)	TOTAL POSTRETIREMENT MEDICAL BENEFITS
2021	$ 1.7
2022	1.5
2023	1.4
2024	1.3
2025	1.2
2026-2030	5.1

The weighted average discount rate used in determining the accumulated postretirement benefit obligation was 2.16% at December 31, 2020, and 3.37% at December 31, 2019. For measurement purposes, a 5.75% annual increase in the cost of pre-age 65 medical benefits and post-age 65 medical benefits were assumed for 2020. For drug claims, a 7.50% annual increase in cost was assumed for 2020. These rates are both assumed to gradually decrease until they reach 4.50% in 2027. The health care cost trend rate assumption has an effect on the amounts reported.

Defined Contribution Plans. The Corporation and its subsidiaries maintain various defined contribution plans covering substantially all employees. The Corporation's contribution to the U.S. plan and to certain European-based plans includes a matching component. The expense associated with defined contribution plans is charged to Employee Benefits and totaled $62.9 million in 2020, $57.6 million in 2019, and $54.4 million in 2018.

Note 24 – Share-Based Compensation Plans

Northern Trust recognizes expense for the grant-date fair value of share-based compensation granted to employees and non-employee directors.

Total compensation expense for share-based payment arrangements to employees and the associated tax impacts were as follows for the periods presented.

TABLE 122: TOTAL COMPENSATION EXPENSE FOR SHARE-BASED PAYMENT ARRANGEMENTS TO EMPLOYEES

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions)	**2020**	2019	2018
Restricted Stock Unit Awards	**$ 78.1**	$ 81.4	$ 96.3
Stock Options	**0.5**	1.4	2.6
Performance Stock Units	**12.8**	25.1	32.0
Total Share-Based Compensation Expense	**$ 91.4**	$ 107.9	$ 130.9
Tax Benefits Recognized	**$ 22.9**	$ 26.7	$ 32.5

As of December 31, 2020, there was $70.8 million of unrecognized compensation cost related to unvested share-based compensation arrangements granted under the Corporation's share-based compensation plans. That cost is expected to be recognized as expense over a weighted-average period of approximately two years.

The Northern Trust Corporation 2017 Long-Term Incentive Plan (2017 Plan) is administered by the Compensation and Benefits Committee (Committee) of the Board of Directors. All employees of the Corporation and its subsidiaries and all directors of the Corporation are eligible to receive awards under the 2017 Plan. The 2017 Plan provides for the grant of non-qualified and incentive stock options; tandem and free-standing stock appreciation rights; stock awards in the form of restricted stock, restricted stock units and other stock awards; and performance awards.

Beginning with grants made on February 21, 2017 under the Northern Trust Corporation 2012 Stock Plan (2012 Plan), restricted stock unit and performance stock unit grants continue to vest in accordance with the original terms of the award if the applicable employee retires after satisfying applicable age and service requirements. For all applicable periods, stock option grants continue to vest in accordance with the original terms of the award if the employee meets applicable age and service requirements upon separation from service.

Grants are outstanding under the 2017 Plan, the 2012 Plan, and the Amended and Restated Northern Trust Corporation 2002 Stock Plan (2002 Plan). The 2017 Plan was approved by stockholders in April 2017. Upon approval of the 2017 Plan, no additional shares have been or will be granted under the 2012 Plan or 2002 Plan. The total number of shares of the Corporation's common stock authorized for issuance under the 2017 Plan is 20,000,000 plus shares forfeited under the 2012 Plan and 2002 Plan. As of December 31, 2020, shares available for future grant under the 2017 Plan, including shares forfeited under the 2012 Plan and 2002 Plan, totaled 17,168,019.

The following describes Northern Trust's share-based payment arrangements and applies to awards under the 2017 Plan, 2012 Plan and the 2002 Plan, as applicable.

Stock Options. Stock options consist of options to purchase common stock at prices not less than 100% of the fair value thereof on the date the options are granted. Options have a maximum 10 years life and generally vest and become exercisable in 1 year to 4 years after the date of grant. All options terminate at such time as determined by the Committee and as provided in the terms and conditions of the respective option grants. There were no options granted during the years ended December 31, 2020, 2019, and 2018.

The following table provides information about stock options granted, vested, and exercised in the years ended December 31, 2020, 2019, and 2018.

TABLE 123: STOCK OPTIONS GRANTED, VESTED, AND EXERCISED

	FOR THE YEAR ENDED DECEMBER 31,		
(In Millions, Except Per Share Information)	**2020**	2019	2018
Grant-Date Fair Value of Stock Options Vested	**$ 4.5**	$ 6.6	$ 8.1
Stock Options Exercised			
Intrinsic Value as of Exercise Date	**13.6**	35.4	28.5
Cash Received	**19.5**	44.0	32.6
Tax Deduction Benefits Realized	**13.4**	35.2	27.7

The following is a summary of changes in nonvested stock options for the year ended December 31, 2020.

TABLE 124: CHANGES IN NONVESTED STOCK OPTIONS

NONVESTED OPTIONS	SHARES	WEIGHTED- AVERAGE GRANT-DATE FAIR VALUE PER SHARE
Nonvested at December 31, 2019	**384,939**	**$ 17.45**
Granted	—	—
Vested	**(270,110)**	**16.71**
Forfeited or Cancelled	—	—
Nonvested at December 31, 2020	**114,829**	**$ 19.18**

A summary of the status of stock options at December 31, 2020, and changes during the year then ended, are presented in the following table.

TABLE 125: STATUS OF STOCK OPTIONS AND CHANGES

($ In Millions Except Per Share Information)	SHARES	WEIGHTED AVERAGE EXERCISE PRICE PER SHARE	WEIGHTED AVERAGE REMAINING CONTRACTUAL TERM (YEARS)	AGGREGATE INTRINSIC VALUE
Options Outstanding, December 31, 2019	**1,696,936**	**$ 64.77**		
Granted	—	—		
Exercised	**(344,686)**	**56.65**		
Forfeited, Expired or Cancelled	**(2,325)**	**49.54**		
Options Outstanding, December 31, 2020	**1,349,925**	**$ 66.87**	**3.3**	**$ 35.5**
Options Exercisable, December 31, 2020	**1,235,096**	**$ 64.90**	**3.2**	**$ 34.9**

Restricted Stock Unit Awards. Restricted stock unit awards may be granted to participants which entitle them to receive a payment in the Corporation’s common stock or cash and such other terms and conditions as the Committee deems appropriate. Each restricted stock unit provides the recipient the opportunity to receive one share of stock for each stock unit that vests. The restricted stock units granted in 2020 predominately vest at a rate equal to 25% each year for four years on the anniversary of the first day of the month following the month in which the grant date falls. Restricted stock unit grants totaled 772,848, 855,112, and 815,314, with weighted average grant-date fair values of $99.58, $91.89, and $103.74 per share, for the years ended December 31, 2020, 2019, and 2018, respectively. The total fair value of restricted stock units vested during the years ended December 31, 2020, 2019, and 2018, was $100.2 million, $89.3 million, and $66.4 million, respectively.

A summary of the status of outstanding restricted stock unit awards at December 31, 2020, and changes during the year then ended, is presented in the following table.

TABLE 126: OUTSTANDING RESTRICTED STOCK UNIT AWARDS

($ In Millions)	NUMBER		AGGREGATE INTRINSIC VALUE
Restricted Stock Unit Awards Outstanding, December 31, 2019	**2,644,762**	**$**	**281.0**
Granted	**772,848**		
Distributed	**(1,245,412)**		
Forfeited	**(26,547)**		
Restricted Stock Unit Awards Outstanding, December 31, 2020	**2,145,651**	**$**	**199.8**
Units Convertible, December 31, 2020	**19,770**	**$**	**1.8**

The following is a summary of nonvested restricted stock unit awards at December 31, 2020, and changes during the year then ended.

TABLE 127: NONVESTED RESTRICTED STOCK UNIT AWARDS

NONVESTED RESTRICTED STOCK UNITS	NUMBER		WEIGHTED AVERAGE GRANT- DATE FAIR VALUE PER UNIT	WEIGHTED AVERAGE REMAINING VESTING TERM (YEARS)
Nonvested at December 31, 2019	**2,624,210**	**$**	**87.26**	**1.7**
Granted	**772,848**		**99.58**	
Vested	**(1,244,630)**		**80.46**	
Forfeited	**(26,547)**		**95.41**	
Nonvested at December 31, 2020	**2,125,881**	**$**	**95.61**	**2.1**

Performance Stock Units. Each performance stock unit provides the recipient the opportunity to receive one share of the Corporation’s common stock for each stock unit at the end of a three-year performance period. For performance stock unit awards granted in 2018 and 2019, the number of units that vest are subject to the attainment of specified performance targets that are a function of internal return on equity goals. For performance stock unit awards granted in 2020, the number of units that vest are subject to the attainment of specified performance targets that are a function of internal return on equity goals and relative return on equity performance compared to a performance peer group of companies. For performance stock units outstanding as of December 31, 2020, and granted in 2018 or 2019, the number of such units that may vest ranges from 0% to 150% of the original award granted based on the attainment of the applicable 3-year average annual return on equity target. Distribution of the shares is then made after vesting.

Performance stock unit grants totaled 205,847, 213,044, and 242,232 for the years ended December 31, 2020, 2019, and 2018, respectively, with weighted average grant-date fair values of $100.83, $93.00, and $104.72. Performance stock units outstanding at target level performance totaled 660,510, 667,741, and 797,531 at December 31, 2020, 2019, and 2018, respectively. Performance stock units had aggregate intrinsic values of $61.5 million, $70.9 million, and $66.7 million, and weighted average remaining vesting terms of 1.0 year each at December 31, 2020, 2019, and 2018, respectively.

Non-employee Director Stock Awards. Stock units with total values of $1.5 million (20,148 units), $1.3 million (14,232 units), and $1.2 million (11,363 units) were granted to non-employee directors in 2020, 2019, and 2018, respectively, which vest or vested on the date of the annual meeting of the Corporation’s stockholders in the following years. Total expense recognized on these grants was $1.6 million, $1.4 million, and $1.3 million in 2020, 2019, and 2018, respectively. Stock units granted to non-employee directors do not have voting rights. Each stock unit entitles a director to one share of common stock at vesting, unless a director elects to defer receipt of the shares. Directors may elect to defer the payment of their annual stock unit grant and cash-based compensation until termination of services as director. Deferred cash compensation is converted into stock units representing shares of common stock of the Corporation. Distributions of deferred stock units are made in stock. For compensation deferred prior to January 1, 2018, distributions of the stock unit accounts that relate to cash-based compensation are made in cash based on the fair value of the stock units at the time of distribution. For compensation deferred on or after January 1, 2018, distributions of the stock unit accounts that relate to cash-based compensation are made in stock.

Note 25 – Cash-Based Compensation Plans

Various incentive plans provide for cash incentives and bonuses to selected employees based upon accomplishment of corporate net income objectives, goals of the reporting segments and support functions, and individual performance. The provision for awards under these plans is charged to Compensation expense and totaled $296.2 million in 2020, $326.1 million in 2019, and $326.5 million in 2018.

Note 26 – Commitments and Contingent Liabilities

Off-Balance Sheet Financial Instruments, Guarantees and Other Commitments. Northern Trust, in the normal course of business, enters into various types of commitments and issues letters of credit to meet the liquidity and credit enhancement needs of its clients. The contractual amounts of these instruments represent the potential credit exposure should the instrument be fully drawn upon and the client default. To control the credit risk associated with entering into commitments and issuing letters of credit, Northern Trust subjects such activities to the same credit quality and monitoring controls as its lending activities.

The following table provides details of Northern Trust's off-balance sheet financial instruments as of December 31, 2020 and 2019.

TABLE 128: SUMMARY OF OFF-BALANCE SHEET FINANCIAL INSTRUMENTS

	DECEMBER 31,					
	2020			2019		
($ In Millions)	**ONE YEAR AND LESS**	**OVER ONE YEAR**	**TOTAL**	ONE YEAR AND LESS	OVER ONE YEAR	TOTAL
Undrawn Commitments to Extend Credit[1]	**$ 11,260.5**	**$ 17,678.0**	**$ 28,938.5**	$ 7,500.2	$ 16,906.0	$ 24,406.2
Standby Letters of Credit and Financial Guarantees[2]	**1,228.1**	**763.5**	**1,991.6**	1,567.6	845.9	2,413.5
Commercial Letters of Credit	**54.6**	**—**	**54.6**	32.3	—	32.3
Custody Securities Lent with Indemnification	**157,478.0**	**—**	**157,478.0**	138,085.9	—	138,085.9
Total Off-Balance Sheet Financial Instruments	**$ 170,021.2**	**$ 18,441.5**	**$ 188,462.7**	$ 147,186.0	$ 17,751.9	$ 164,937.9

(1) These amounts exclude $384.7 million and $243.6 million of commitments participated to others at December 31, 2020 and 2019, respectively.
(2) These amounts include $24.2 million and $44.5 million of standby letters of credit secured by cash deposits or participated to others as of December 31, 2020 and 2019, respectively.

Undrawn Commitments to Extend Credit generally have fixed expiration dates or other termination clauses. Since a significant portion of the commitments are expected to expire without being drawn upon, the total commitment amount does not necessarily represent future loans or liquidity requirements.

Standby Letters of Credit obligate Northern Trust to meet certain financial obligations of its clients, if, under the contractual terms of the agreement, the clients are unable to do so. These instruments are primarily issued to support public and private financial commitments, including commercial paper, bond financing, initial margin requirements on futures exchanges, and similar transactions. Northern Trust is obligated to meet the entire financial obligation of these agreements and in certain cases is able to recover the amounts paid through recourse against collateral received or other participants.

Financial Guarantees are issued by Northern Trust to guarantee the performance of a client to a third party under certain arrangements.

Commercial Letters of Credit are instruments issued by Northern Trust on behalf of its clients that authorize a third party (the beneficiary) to draw drafts up to a stipulated amount under the specified terms and conditions of the agreement and other similar instruments. Commercial letters of credit are issued primarily to facilitate international trade.

Custody Securities Lent with Indemnification involves Northern Trust lending securities owned by clients to borrowers who are reviewed and approved by the Northern Trust Capital Markets Credit Committee, as part of its securities custody activities and at the direction of its clients. In connection with these activities, Northern Trust has issued indemnifications to certain clients against certain losses that are a direct result of a borrower’s failure to return securities when due, should the value of such securities exceed the value of the collateral required to be posted. Borrowers are required to collateralize fully securities received with cash or marketable securities. As securities are loaned, collateral is maintained at a minimum 100% of the fair value of the securities plus accrued interest. The collateral is revalued on a daily basis. The amount of securities loaned as of December 31, 2020 and 2019 subject to indemnification was $157.5 billion and $138.1 billion, respectively. Because of the credit quality of the borrowers and the requirement to fully collateralize securities borrowed, management believes that the exposure to credit loss from this activity is not significant and no liability was recorded at December 31, 2020, or 2019 related to these indemnifications.

Legal Proceedings. In the normal course of business, the Corporation and its subsidiaries are routinely defendants in or parties to pending and threatened legal actions, and are subject to regulatory examinations, information-gathering requests, investigations, and proceedings, both formal and informal. In certain legal actions, claims for substantial monetary damages are asserted. In regulatory matters, claims for disgorgement, restitution, penalties and/or other remedial actions or sanctions may be sought.

Based on current knowledge, after consultation with legal counsel and after taking into account current accruals, management does not believe that losses, fines or penalties, if any, arising from pending litigation or threatened legal actions or regulatory matters either individually or in the aggregate, after giving effect to applicable reserves and insurance coverage will have a material adverse effect on the consolidated financial position or liquidity of the Corporation, although such matters could have a material adverse effect on the Corporation’s operating results for a particular period.

Under GAAP, (i) an event is “probable” if the “future event or events are likely to occur”; (ii) an event is “reasonably possible” if “the chance of the future event or events occurring is more than remote but less than likely”; and (iii) an event is “remote” if “the chance of the future event or events occurring is slight.”

The outcome of litigation and regulatory matters is inherently difficult to predict and/or the range of loss often cannot be reasonably estimated, particularly for matters that (i) will be decided by a jury, (ii) are in early stages, (iii) involve uncertainty as to the likelihood of a class being certified or the ultimate size of the class, (iv) are subject to appeals or motions, (v) involve significant factual issues to be resolved, including with respect to the amount of damages, (vi) do not specify the amount of damages sought or (vii) seek very large damages based on novel and complex damage and liability legal theories. Accordingly, the Corporation cannot reasonably estimate the eventual outcome of these pending matters, the timing of their ultimate resolution or what the eventual loss, fines or penalties, if any, related to each pending matter will be.

In accordance with applicable accounting guidance, the Corporation records accruals for litigation and regulatory matters when those matters present loss contingencies that are both probable and reasonably estimable. When loss contingencies are not both probable and reasonably estimable, the Corporation does not record accruals. No material accruals have been recorded for pending litigation or threatened legal actions or regulatory matters.

For a limited number of matters for which a loss is reasonably possible in future periods, whether in excess of an accrued liability or where there is no accrued liability, the Corporation is able to estimate a range of possible loss. As of December 31, 2020, the Corporation has estimated the range of reasonably possible loss for these matters to be from zero to approximately $20 million in the aggregate. The Corporation’s estimate with respect to the aggregate range of reasonably possible loss is based upon currently available information and is subject to significant judgment and a variety of assumptions and known and unknown uncertainties. The matters underlying the estimated range will change from time to time, and actual results may vary significantly from the current estimate.

In certain other pending matters, there may be a range of reasonably possible loss (including reasonably possible loss in excess of amounts accrued) that cannot be reasonably estimated for the reasons described above. Such matters are not included in the estimated range of reasonably possible loss discussed above.

In 2015, Northern Trust Fiduciary Services (Guernsey) Limited (NTFS), an indirect subsidiary of the Corporation, was charged by a French investigating magistrate judge with complicity in estate tax fraud in connection with the administration of two trusts for which it serves as trustee. Charges also were brought against a number of other persons and entities related to this matter. In 2017, a French court found no estate tax fraud had occurred and NTFS and all other persons and entities charged were acquitted. The Public Prosecutor’s Office of France appealed the court decision and in June 2018 a French appellate court issued its opinion on the matter, acquitting all persons and entities charged, including NTFS. In January 2021, the Cour de Cassation, the highest court in France, reversed the June 2018 appellate court ruling, requiring a re-trial at the appellate court level. The re-trial proceedings in the appellate court have not yet been scheduled. As trustee, NTFS provided no tax advice and had no involvement in the preparation or filing of the challenged estate tax filings.

Visa Class B Common Shares. Northern Trust, as a member of Visa U.S.A. Inc. (Visa U.S.A.) and in connection with the 2007 restructuring of Visa U.S.A. and its affiliates and the 2008 initial public offering of Visa Inc. (Visa), received certain Visa Class B common shares. The Visa Class B common shares are subject to certain selling restrictions until the final resolution of certain litigation related to interchange fees involving Visa (the covered litigation), at which time the shares are convertible into Visa Class A common shares based on a conversion rate dependent upon the ultimate cost of resolving the covered litigation. On June 28, 2018, and September 27, 2019, Visa deposited an additional $600 million and $300 million, respectively, into an escrow account previously established with respect to the covered litigation. As a result of the additional contributions to the escrow account, the rate at which Visa Class B common shares will convert into Visa Class A common shares was reduced.

In September 2018, Visa reached a proposed class settlement agreement covering damage claims but not injunctive relief claims regarding the covered litigation. In December 2019, the district court granted final approval for the proposed class settlement agreement. Certain merchants have opted out of the class settlement and are pursuing claims separately, while other merchants have appealed the approval order granted by the district court. The ultimate resolution of the covered litigation, the timing for removal of the selling restrictions on the Visa Class B common shares and the rate at which such shares will ultimately convert into Visa Class A common shares are uncertain.

In June 2016 and 2015, Northern Trust recorded a $123.1 million and $99.9 million net gain on the sale of 1.1 million and 1.0 million of its Visa Class B common shares, respectively. These sales do not affect Northern Trust's risk related to the impact of the covered litigation on the rate at which such shares will ultimately convert into Visa Class A common shares. Northern Trust continued to hold approximately 4.1 million Visa Class B common shares, which are recorded at their original cost basis of zero, as of both December 31, 2020 and 2019.

Clearing and Settlement Organizations. The Bank is a participating member of various cash, securities, and foreign exchange clearing and settlement organizations. It participates in these organizations on behalf of its clients and on its own behalf as a result of its own activities. A wide variety of cash and securities transactions are settled through these organizations, including those involving obligations of states and political subdivisions, asset-backed securities, commercial paper, dollar placements, and securities issued by the Government National Mortgage Association.

As a result of its participation in cash, securities, and foreign exchange clearing and settlement organizations, the Bank could be responsible for a pro rata share of certain credit-related losses arising out of the clearing activities. The method in which such losses would be shared by the clearing members is stipulated in each clearing organization's membership agreement. Credit exposure related to these agreements varies from day to day, primarily as a result of fluctuations in the volume of transactions cleared through the organizations. At December 31, 2020 and 2019, we have not recorded any material liabilities under these arrangements. Controls related to these clearing transactions are closely monitored by management to protect the assets of Northern Trust and its clients.

Note 27 – Derivative Financial Instruments

Northern Trust is a party to various derivative financial instruments that are used in the normal course of business to meet the needs of its clients, as part of its trading activity for its own account; and as part of its risk management activities. These instruments may include foreign exchange contracts, interest rate contracts, total return swap contracts, and swaps related to the sale of certain Visa Class B common shares. Please refer to Note 1, "Summary of Significant Accounting Policies" for the significant accounting policies for derivative financial instruments.

Foreign exchange contracts are agreements to exchange specific amounts of currencies at a future date, at a specified rate of exchange. Foreign exchange contracts are entered into primarily to meet the foreign exchange needs of clients. Foreign exchange contracts are also used for trading and risk management purposes. For risk management purposes, Northern Trust uses foreign exchange contracts to reduce its exposure to changes in foreign exchange rates relating to certain forecasted non-functional currency denominated revenue and expenditure transactions, foreign-currency-denominated assets and liabilities, including debt securities and net investments in non-U.S. affiliates.

Interest rate contracts include swap and option contracts. Interest rate swap contracts involve the exchange of fixed and floating rate interest payment obligations without the exchange of the underlying principal amounts. Northern Trust enters into interest rate swap contracts with its clients and also may utilize such contracts to reduce or eliminate the exposure to changes in the cash flows or fair value of hedged assets or liabilities due to changes in interest rates. Interest rate option contracts may include caps, floors, collars and swaptions, and provide for the transfer or reduction of interest rate risk, typically in exchange for a fee. Northern Trust enters into option contracts as a seller of interest rate protection to clients. Northern Trust receives a fee at the outset of the agreement for the assumption of the risk of an unfavorable change in interest rates. This assumed interest rate risk is then mitigated by entering into an offsetting position with an outside counterparty. Northern Trust may also purchase or enter into option contracts for risk management purposes including to reduce the exposure to changes in the cash flows of hedged assets due to changes in interest rates.

The following table shows the notional and fair values of all derivative financial instruments as of December 31, 2020 and 2019.

TABLE 129: NOTIONAL AND FAIR VALUES OF DERIVATIVE FINANCIAL INSTRUMENTS

(In Millions)	**DECEMBER 31, 2020** NOTIONAL VALUE	FAIR VALUE ASSET[1]	FAIR VALUE LIABILITY[2]	DECEMBER 31, 2019 NOTIONAL VALUE	FAIR VALUE ASSET[1]	FAIR VALUE LIABILITY[2]
Derivatives Designated as Hedging under GAAP						
Interest Rate Contracts						
Fair Value Hedges	**$ 4,717.6**	**$ 8.2**	**$ 10.2**	$ 4,538.2	$ 20.3	$ 20.9
Cash Flow Hedges	**50.0**	**0.1**	**—**	200.0	0.2	0.2
Foreign Exchange Contracts						
Cash Flow Hedges	**6,554.4**	**15.4**	**104.0**	1,661.5	8.5	11.5
Net Investment Hedges	**3,480.3**	**0.1**	**207.7**	2,873.8	73.7	11.9
Total Derivatives Designated as Hedging under GAAP	**$ 14,802.3**	**$ 23.8**	**$ 321.9**	$ 9,273.5	$ 102.7	$ 44.5
Derivatives Not Designated as Hedging under GAAP						
Non-Designated Risk Management Derivatives						
Foreign Exchange Contracts	**$ 67.7**	**$ 0.1**	**$ 0.1**	$ 176.5	$ 0.9	$ 0.7
Other Financial Derivatives[3]	**745.4**	**—**	**35.3**	640.3	—	33.4
Total Non-Designated Risk Management Derivatives	**$ 813.1**	**$ 0.1**	**$ 35.4**	$ 816.8	$ 0.9	$ 34.1
Client-Related and Trading Derivatives						
Foreign Exchange Contracts	**$ 320,563.4**	**$ 4,245.1**	**$ 4,410.7**	$ 291,533.6	$ 3,151.7	$ 3,158.1
Interest Rate Contracts	**10,573.3**	**289.2**	**114.8**	8,976.8	132.4	76.3
Total Client-Related and Trading Derivatives	**$ 331,136.7**	**$ 4,534.3**	**$ 4,525.5**	$ 300,510.4	$ 3,284.1	$ 3,234.4
Total Derivatives Not Designated as Hedging under GAAP	**$ 331,949.8**	**$ 4,534.4**	**$ 4,560.9**	$ 301,327.2	$ 3,285.0	$ 3,268.5
Total Gross Derivatives	**$ 346,752.1**	**$ 4,558.2**	**$ 4,882.8**	$ 310,600.7	$ 3,387.7	$ 3,313.0
Less: Netting[4]		**3,507.8**	**2,817.1**		2,338.0	1,618.4
Total Derivative Financial Instruments		**$ 1,050.4**	**$ 2,065.7**		$ 1,049.7	$ 1,694.6

(1) *Derivative assets are reported in Other Assets on the consolidated balance sheets.*
(2) *Derivative liabilities are reported in Other Liabilities on the consolidated balance sheets.*
(3) *This line includes swaps related to sales of certain Visa Class B common shares.*
(4) *See further detail in Note 28, "Offsetting of Assets and Liabilities."*

Notional amounts of derivative financial instruments do not represent credit risk, and are not recorded on the consolidated balance sheets. They are used merely to express the volume of this activity. Northern Trust's credit-related risk of loss is limited to the positive fair value of the derivative instrument, net of any collateral received, which is significantly less than the notional amount.

Hedging Derivative Instruments Designated under GAAP. Northern Trust uses derivative instruments to hedge its exposure to foreign currency, interest rate, and equity price. Certain hedging relationships are formally designated and qualify for hedge accounting under GAAP as fair value, cash flow or net investment hedges. Other derivatives that are entered into for risk management purposes as economic hedges are not formally designated as hedges and changes in fair value are recognized currently in Other Operating Income within the consolidated statements of income (see below section "Derivative Instruments Not Designated as Hedging under GAAP").

Fair Value Hedges. Derivatives are designated as fair value hedges to limit Northern Trust's exposure to changes in the fair value of assets and liabilities due to movements in interest rates.

Cash Flow Hedges. Derivatives are also designated as cash flow hedges in order to minimize the variability in cash flows of earning assets or forecasted transactions caused by movements in interest or foreign exchange rates.

There were no material gains or losses reclassified into earnings during the years ended December 31, 2020, 2019, and 2018 as a result of the discontinuance of forecasted transactions that were no longer probable of occurring. It is estimated that net losses of $3.2 million and $83.1 million will be reclassified into net income within the next twelve months relating to cash flow hedges of foreign-currency-denominated transactions and cash flow hedges of foreign-currency-denominated debt securities, respectively. It is estimated that a net gain of $0.1 million will be reclassified into net income upon the receipt of interest payments on earning assets within the next twelve months relating to cash flow hedges of available for sale debt securities. As of December 31, 2020, 23 months was the maximum length of time over which the exposure to variability in future cash flows of forecasted foreign-currency-denominated transactions was being hedged.

The following table provides fair value and cash flow hedge derivative gains and losses recognized in income during the years ended December 31, 2020, 2019 and 2018.

TABLE 130: LOCATION AND AMOUNT OF FAIR VALUE AND CASH FLOW HEDGE DERIVATIVE GAINS AND LOSSES RECORDED IN INCOME

(in Millions)	INTEREST INCOME			INTEREST EXPENSE			OTHER OPERATING INCOME		
For the Year Ended December 31,	**2020**	2019	2018	**2020**	2019	2018	**2020**	2019	2018
Total amounts on the consolidated statements of income	**$1,643.5**	$2,499.9	$2,321.4	**$ 200.3**	$ 822.0	$ 698.7	**$ 194.0**	$ 145.5	$ 127.5
Gains (Losses) on fair value hedges recognized on									
Interest Rate Contracts									
Recognized on derivatives	**(66.3)**	(95.9)	13.9	**100.2**	99.4	(9.5)	**—**	—	—
Recognized on hedged items	**66.3**	95.9	(13.9)	**(100.2)**	(99.4)	9.5	**—**	—	—
Amounts related to interest settlements on derivatives	**(13.2)**	21.2	17.8	**29.9**	5.2	7.9	**—**	—	—
Total gains (losses) recognized on fair value hedges	**$ (13.2)**	$ 21.2	$ 17.8	**$ 29.9**	$ 5.2	$ 7.9	**$ —**	$ —	$ —
Gains (Losses) on cash flow hedges recognized on									
Foreign Exchange Contracts									
Net gains (losses) reclassified from AOCI to net income	**27.4**	26.4	67.4	**—**	—	—	**0.2**	0.8	3.9
Interest Rate Contracts									
Net gains (losses) reclassified from AOCI to net income	**0.5**	(0.5)	(0.2)	**—**	—	—	**—**	—	—
Total gains (losses) reclassified from AOCI to net income on cash flow hedges	**$ 27.9**	$ 25.9	$ 67.2	**$ —**	$ —	$ —	**$ 0.2**	$ 0.8	$ 3.9

The following table provides the impact of fair value hedge accounting on the carrying value of the designated hedged items as of December 31, 2020 and 2019.

TABLE 131: HEDGED ITEMS IN FAIR VALUE HEDGES

	DECEMBER 31, 2020		DECEMBER 31, 2019	
(In Millions)	**CARRYING VALUE OF THE HEDGED ITEMS**	**CUMULATIVE HEDGE ACCOUNTING BASIS ADJUSTMENT**[(1)]	CARRYING VALUE OF THE HEDGED ITEMS	CUMULATIVE HEDGE ACCOUNTING BASIS ADJUSTMENT[(2)]
Available for Sale Debt Securities[(3)]	**$ 2,075.1**	**$ 48.8**	$ 2,981.0	$ 3.3
Senior Notes and Long-Term Subordinated Debt	**2,745.1**	**221.5**	1,748.5	126.9
Total	**$ 4,820.2**	**$ 270.3**	$ 4,729.5	$ 130.2

[(1)] The cumulative hedge accounting basis adjustment includes $10.4 million related to discontinued hedging relationships of available for sale debt securities as of December 31, 2020. There are no amounts related to discontinued hedging relationships in the cumulative hedge accounting basis adjustment of senior notes and long-term debt as of December 31, 2020.
[(2)] The cumulative hedge accounting basis adjustment includes $1.5 million related to discontinued hedging relationships of available for sale debt securities as of December 31, 2019. There were no amounts related to discontinued hedging relationships in the cumulative hedge accounting basis adjustment of senior notes and long-term debt as of December 31, 2019.
[(3)] Carrying value represents amortized cost.

Net Investment Hedges. Certain foreign exchange contracts are designated as net investment hedges to minimize Northern Trust's exposure to variability in the foreign currency translation of net investments in non-U.S. branches and subsidiaries. Net investment hedge losses of $178.7 million and gains of $59.7 million were recognized in AOCI related to foreign exchange contracts for the years ended December 31, 2020 and 2019, respectively.

Derivative Instruments Not Designated as Hedging under GAAP. Northern Trust's derivative instruments that are not designated as hedging under GAAP include derivatives for purposes of client-related and trading activities, as well as other risk management purposes. These activities consist principally of providing foreign exchange services to clients in connection with Northern Trust's global custody business. However, in the normal course of business, Northern Trust also engages in trading of currencies for its own account.

Non-designated risk management derivatives include foreign exchange contracts entered into to manage the foreign currency risk of non-U.S.-dollar-denominated assets and liabilities, the net investment in certain non-U.S. affiliates, commercial loans, and forecasted foreign-currency-denominated transactions. Swaps related to sales of certain Visa Class B common shares were entered into pursuant to which Northern Trust retains the risks associated with the ultimate conversion of the Visa Class B common shares into Visa Class A common shares. Total return swaps are entered into to manage the equity price risk associated with certain investments.

Changes in the fair value of derivative instruments not designated as hedges under GAAP are recognized currently in income. The following table provides the location and amount of gains and losses recorded on the consolidated statements of income for the years ended December 31, 2020, 2019, and 2018 for derivative instruments not designated as hedges under GAAP.

TABLE 132: LOCATION AND AMOUNT OF GAINS AND LOSSES RECORDED IN INCOME FOR DERIVATIVES NOT DESIGNATED AS HEDGING UNDER GAAP

		AMOUNT OF DERIVATIVE GAINS (LOSSES) RECOGNIZED IN INCOME		
(In Millions)	DERIVATIVE GAINS (LOSSES) LOCATION RECOGNIZED IN INCOME	**2020**	2019	2018
Non-designated risk management derivatives				
Foreign Exchange Contracts	Other Operating Income	**$ 6.4**	$ (1.6)	$ (4.1)
Other Financial Derivatives[1]	Other Operating Income	**(18.3)**	(20.0)	(19.2)
Gains (Losses) from non-designated risk management derivatives		**$ (11.9)**	$ (21.6)	$ (23.3)
Client-related and trading derivatives				
Foreign Exchange Contracts	Foreign Exchange Trading Income	**$ 290.4**	$ 250.9	$ 307.2
Interest Rate Contracts	Security Commissions and Trading Income	**22.4**	12.9	7.7
Gains (Losses) from client-related and trading derivatives		**$ 312.8**	$ 263.8	$ 314.9
Total gains (losses) from derivatives not designated as hedging under GAAP		**$ 300.9**	$ 242.2	$ 291.6

[1] *This line includes swaps related to the sale of certain Visa Class B common shares and total return swap contracts.*

Note 28 – Offsetting of Assets and Liabilities

The following table provides information regarding the offsetting of derivative assets and of securities purchased under agreements to resell within the consolidated balance sheets as of December 31, 2020 and 2019.

TABLE 133: OFFSETTING OF DERIVATIVE ASSETS AND SECURITIES PURCHASED UNDER AGREEMENTS TO RESELL

	DECEMBER 31, 2020				
(In Millions)	GROSS RECOGNIZED ASSETS	GROSS AMOUNTS OFFSET IN THE BALANCE SHEET[2]	NET AMOUNTS PRESENTED IN THE BALANCE SHEET	GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET	NET AMOUNT[3]
Derivative Assets[1]					
Foreign Exchange Contracts Over the Counter (OTC)	**$ 3,799.7**	**$ 3,505.3**	**$ 294.4**	**$ 0.9**	**$ 293.5**
Interest Rate Swaps OTC	**295.9**	**2.5**	**293.4**	**—**	**293.4**
Interest Rate Swaps Exchange Cleared	**1.6**	**—**	**1.6**	**—**	**1.6**
Total Derivatives Subject to a Master Netting Arrangement	**4,097.2**	**3,507.8**	**589.4**	**0.9**	**588.5**
Total Derivatives Not Subject to a Master Netting Arrangement	**461.0**	**—**	**461.0**	**—**	**461.0**
Total Derivatives	**4,558.2**	**3,507.8**	**1,050.4**	**0.9**	**1,049.5**
Securities Purchased under Agreements to Resell	**$ 1,596.5**	**$ —**	**$ 1,596.5**	**$ 1,596.5**	**$ —**

	DECEMBER 31, 2019				
(In Millions)	GROSS RECOGNIZED ASSETS	GROSS AMOUNTS OFFSET IN THE BALANCE SHEET[2]	NET AMOUNTS PRESENTED IN THE BALANCE SHEET	GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET	NET AMOUNT[3]
Derivative Assets[1]					
Foreign Exchange Contracts OTC	$ 2,691.1	$ 2,334.1	$ 357.0	$ 16.5	$ 340.5
Interest Rate Swaps OTC	151.9	3.9	148.0	—	148.0
Interest Rate Swaps Exchange Cleared	1.0	—	1.0	—	1.0
Total Derivatives Subject to a Master Netting Arrangement	2,844.0	2,338.0	506.0	16.5	489.5
Total Derivatives Not Subject to a Master Netting Arrangement	543.7	—	543.7	0.3	543.4
Total Derivatives	3,387.7	2,338.0	1,049.7	16.8	1,032.9
Securities Purchased under Agreements to Resell	$ 707.8	$ —	$ 707.8	$ 707.8	$ —

[1] Derivative assets are reported in Other Assets on the consolidated balance sheets. Other Assets (excluding derivative assets) totaled \$7.3 billion and \$7.4 billion as of December 31, 2020 and 2019, respectively.
[2] Including cash collateral received from counterparties.
[3] Northern Trust did not possess any cash collateral that was not offset on the consolidated balance sheets that could have been used to offset the net amounts presented on the consolidated balance sheets as of December 31, 2020 and 2019.

The following table provides information regarding the offsetting of derivative liabilities and of securities sold under agreements to repurchase within the consolidated balance sheets as of December 31, 2020 and 2019.

TABLE 134: OFFSETTING OF DERIVATIVE LIABILITIES AND SECURITIES SOLD UNDER AGREEMENTS TO REPURCHASE

	DECEMBER 31, 2020				
(In Millions)	**GROSS RECOGNIZED LIABILITIES**	**GROSS AMOUNTS OFFSET IN THE BALANCE SHEET[2]**	**NET AMOUNTS PRESENTED IN THE BALANCE SHEET**	**GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET**	**NET AMOUNT[3]**
Derivative Liabilities[1]					
Foreign Exchange Contracts OTC	**$ 3,577.7**	**$ 2,718.6**	**$ 859.1**	**$ 0.5**	**$ 858.6**
Interest Rate Swaps OTC	**125.0**	**98.5**	**26.5**	**—**	**26.5**
Interest Rate Swaps Exchange Cleared	**—**	**—**	**—**	**—**	**—**
Other Financial Derivatives	**35.3**	**—**	**35.3**	**—**	**35.3**
Total Derivatives Subject to a Master Netting Arrangement	**3,738.0**	**2,817.1**	**920.9**	**0.5**	**920.4**
Total Derivatives Not Subject to a Master Netting Arrangement	**1,144.8**	**—**	**1,144.8**	**—**	**1,144.8**
Total Derivatives	**4,882.8**	**2,817.1**	**2,065.7**	**0.5**	**2,065.2**
Securities Sold under Agreements to Repurchase	**$ 39.8**	**$ —**	**$ 39.8**	**$ 39.8**	**$ —**

	DECEMBER 31, 2019				
(In Millions)	GROSS RECOGNIZED LIABILITIES	GROSS AMOUNTS OFFSET IN THE BALANCE SHEET[2]	NET AMOUNTS PRESENTED IN THE BALANCE SHEET	GROSS AMOUNTS NOT OFFSET IN THE BALANCE SHEET	NET AMOUNT[3]
Derivative Liabilities[1]					
Foreign Exchange Contracts OTC	$ 2,181.6	$ 1,548.6	$ 633.0	$ 0.1	$ 632.9
Interest Rate Swaps OTC	96.7	57.3	39.4	—	39.4
Interest Rate Swaps Exchange Cleared	0.7	—	0.7	—	0.7
Other Financial Derivatives	33.4	12.5	20.9	—	20.9
Total Derivatives Subject to a Master Netting Arrangement	2,312.4	1,618.4	694.0	0.1	693.9
Total Derivatives Not Subject to a Master Netting Arrangement	1,000.6	—	1,000.6	—	1,000.6
Total Derivatives	3,313.0	1,618.4	1,694.6	0.1	1,694.5
Securities Sold under Agreements to Repurchase	$ 489.7	$ —	$ 489.7	$ 489.7	$ —

(1) Derivative liabilities are reported in Other Liabilities on the consolidated balance sheets. Other Liabilities (excluding derivative liabilities) totaled $3.5 billion and $3.1 billion as of December 31, 2020 and 2019, respectively.
(2) Including cash collateral deposited with counterparties.
(3) Northern Trust did not place any cash collateral with counterparties that was not offset on the consolidated balance sheets that could have been used to offset the net amounts presented on the consolidated balance sheets as of December 31, 2020 and 2019.

All of Northern Trust's securities sold under agreements to repurchase (repurchase agreements) and securities purchased under agreements to resell (reverse repurchase agreements) involve the transfer of financial assets in exchange for cash subject to a right and obligation to repurchase those assets for an agreed upon amount. In the event of a repurchase failure, the cash or financial assets are available for offset. All of Northern Trust's repurchase agreements and reverse repurchase agreements are subject to a master netting arrangement, which sets forth the rights and obligations for repurchase and offset. Under the master netting arrangement, Northern Trust is entitled to set off receivables from and collateral placed with a single counterparty against obligations owed to that counterparty. In addition, collateral held by Northern Trust can be offset against receivables from that counterparty. However, Northern Trust's repurchase agreements and reverse repurchase agreements do not meet the requirements to net under GAAP.

Derivative asset and liability positions with a single counterparty can be offset against each other in cases where legally enforceable master netting arrangements or similar agreements exist. Derivative assets and liabilities can be further offset by cash collateral received from, and deposited with, the transacting counterparty. The basis for this view is that, upon termination of transactions subject to a master netting arrangement or similar agreement, the individual derivative receivables do not represent resources to which general creditors have rights and individual derivative payables do not represent claims that are equivalent to the claims of general creditors.

Credit risk associated with derivative instruments relates to the failure of the counterparty and the failure of Northern Trust to pay based on the contractual terms of the agreement, and is generally limited to the unrealized fair value gains and losses on these instruments, net of any collateral received or deposited. The amount of credit risk will increase or decrease during the lives of the instruments as interest rates, foreign exchange rates, or equity prices fluctuate. Northern Trust's risk is controlled by limiting such activity to an approved list of counterparties and by subjecting such activity to the same credit and quality controls as are followed in lending and investment activities. Credit Support Annexes and other similar agreements are currently in place with a number of Northern Trust's counterparties which mitigate the aforementioned credit risk associated with derivative activity conducted with those counterparties by requiring that significant net unrealized fair value gains be supported by collateral placed with Northern Trust.

Additional cash collateral received from and deposited with derivative counterparties totaling $111.0 million and $49.0 million, respectively, as of December 31, 2020, and $196.3 million and $2.0 million, respectively, as of December 31, 2019, was not offset against derivative assets and liabilities on the consolidated balance sheets as the amounts exceeded the net derivative positions with those counterparties.

Certain master netting arrangements Northern Trust enters into with derivative counterparties contain credit risk-related contingent features in which the counterparty has the option to declare Northern Trust in default and accelerate cash settlement of net derivative liabilities with the counterparty in the event Northern Trust's credit rating falls below specified levels. The aggregate fair value of all derivative instruments with credit-risk-related contingent features that were in a liability position was $1,648.2 million and $766.2 million at December 31, 2020 and 2019, respectively. Cash collateral amounts deposited with derivative counterparties on those dates included $1,044.0 million and $327.1 million, respectively, posted against these liabilities, resulting in a net maximum amount of termination payments that could have been required at December 31, 2020 and 2019 of $604.2 million and $439.1 million, respectively. Accelerated settlement of these liabilities would not have a material effect on the consolidated financial position or liquidity of Northern Trust.

Note 29 – Variable Interest Entities

Variable Interest Entities (VIEs) are defined within GAAP as entities which either (1) lack sufficient equity at risk to permit the entity to finance its activities without additional subordinated financial support, (2) have equity investors that lack attributes typical of an equity investor, such as the ability to make significant decisions through voting rights affecting the entity's operations, or the obligation to absorb expected losses or the right to receive residual returns of the entity, or (3) are structured with voting rights that are disproportionate to the equity investor's obligation to absorb losses or right to receive returns, and substantially all of the activities are conducted on behalf of the holder of the equity investment at risk with disproportionately few voting rights. Investors that finance a VIE through debt or equity interests are variable interest holders in the entity and the variable interest holder, if any, that has both the power to direct the activities that most significantly impact the entity's economic performance and, through its variable interest, the obligation to absorb losses or the right to receive returns that could potentially be significant to the entity is deemed to be the VIE's primary beneficiary and is required to consolidate the VIE.

Leveraged Leases. In leveraged leasing transactions, Northern Trust acts as lessor of the underlying asset subject to the lease and typically funds 20 - 30% of the asset's cost via an equity ownership in a trust with the remaining 70 - 80% provided by third party non-recourse debt holders. In such transactions, the trusts, which are VIEs, are created to provide the lessee use of the property with substantially all of the rights and obligations of ownership. The lessee's maintenance and operation of the leased property has a direct effect on the fair value of the underlying property, and the lessee also has the ability to increase the benefits it can receive and limit the losses it can suffer by the manner in which it uses the property. As a result, Northern Trust has determined that it is not the primary beneficiary of the leveraged lease trust VIEs given it lacks the power to direct the activities that most significantly impact the economic performance of the leveraged lease trust VIEs.

Northern Trust's maximum exposure to loss as a result of its involvement with leveraged lease trust VIEs is limited to the carrying amounts of its leveraged lease investments. As of December 31, 2020 and 2019, the carrying amounts of these investments, which are included in Loans and Leases on the consolidated balance sheets, were $11.4 million and $42.6 million, respectively. Northern Trust's funding requirements relative to the leveraged lease trust VIEs are limited to its invested capital. Northern Trust has no other liquidity arrangements or obligations to purchase assets of the leveraged lease trust VIEs that would expose Northern Trust to a loss.

Tax Credit Structures. Northern Trust invests in qualified affordable housing projects and community development entities (collectively, community development projects) that are designed to generate a return primarily through the realization of tax credits. The community development projects are formed as limited partnerships and limited liability companies in which Northern Trust invests as a limited partner/investor member through equity contributions. The economic performance of the community development projects, some of which are VIEs, is subject to the performance of their underlying investment and their ability to operate in compliance with the rules and regulations necessary for the qualification of tax credits generated by equity investments. Northern Trust has determined that it is not the primary beneficiary of any community development project VIEs as it lacks the power to direct the activities that most significantly impact the economic performance of the underlying investments or to affect their ability to operate in compliance with the rules and regulations necessary for the qualification of tax credits generated by equity investments. This power is held by the general partners and managing members who exercise full and exclusive control of the operations of the community development project VIEs.

Northern Trust's maximum exposure to loss as a result of its involvement with community development projects is limited to the carrying amounts of its investments, including any undrawn commitments. As of December 31, 2020 and 2019, the carrying amounts of these investments in community development projects that generate tax credits, included in Other Assets on the consolidated balance sheets, totaled $919.6 million and $749.3 million, respectively, of which $874.0 million and $700.3 million are VIEs as of December 31, 2020 and 2019, respectively. As of December 31, 2020 and 2019, liabilities related to unfunded commitments on investments in tax credit community development projects, included in Other Liabilities on the consolidated balance sheets, totaled $351.6 million and $376.2 million, respectively, of which $335.9 million and $354.3 million related to undrawn commitments on VIEs as of December 31, 2020 and 2019, respectively.

Northern Trust's funding requirements are limited to its invested capital and undrawn commitments for future equity contributions. Northern Trust has no exposure to loss from liquidity arrangements and no obligation to purchase assets of the community development projects.

Tax credits and other tax benefits attributable to community development projects totaled $78.9 million and $67.4 million, respectively, as of December 31, 2020 and 2019.

Investment Funds. Northern Trust acts as asset manager for various funds in which clients of Northern Trust are investors. As an asset manager of funds, Northern Trust earns a competitively priced fee that is based on assets managed and varies with each fund's investment objective. Based on its analysis, Northern Trust has determined that it is not the primary beneficiary of these VIEs under GAAP.

Some of the funds for which Northern Trust acts as asset manager comply or operate in accordance with requirements that are similar to those in Rule 2a-7 of the Investment Company Act of 1940 for registered money market funds and therefore the funds are exempt from the consolidation requirements in ASC 810-10. Northern Trust voluntarily waived $36.4 million of money market mutual fund fees for the year ended December 31, 2020 related to the low-interest-rate environment and certain competitive factors. Northern Trust did not waive any money market mutual fund fees for the year ended December 31, 2019. Northern Trust does not have any contractual obligations to provide financial support to the funds. Any potential future support of the funds will be at the discretion of Northern Trust after an evaluation of the specific facts and circumstances.

Periodically, Northern Trust makes seed capital investments to certain funds. As of December 31, 2020, Northern Trust had no seed capital investments and no unfunded commitments related to seed capital investments. As of December 31, 2019, Northern Trust had $112.0 million of investments valued using net asset value per share and included in Other Assets and had no unfunded commitments related to seed capital investments.

Note 30 – Pledged and Restricted Assets

Certain of Northern Trust's subsidiaries, as required or permitted by law, pledge assets to secure public and trust deposits, repurchase agreements and borrowings, as well as for other purposes, including support for securities settlement, primarily related to client activities, and for derivative contracts.

The following table presents Northern Trust's pledged assets.

TABLE 135: TYPE OF PLEDGED ASSETS

(In Billions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019
Securities		
Obligations of States and Political Subdivisions	**$ 2.9**	$ 1.0
Government Sponsored Agency and Other Securities	**32.5**	33.4
Loans	**12.1**	7.7
Total Pledged Assets	**$ 47.5**	$ 42.1

Collateral required for these purposes totaled $5.7 billion and $8.5 billion at December 31, 2020 and 2019, respectively. The following table presents the available for sale debt securities pledged as collateral that are included in pledged assets.

TABLE 136: FAIR VALUE OF AVAILABLE FOR SALE DEBT SECURITIES INCLUDED IN PLEDGED ASSETS

	SECURITIES SOLD UNDER AGREEMENTS TO REPURCHASE		DERIVATIVE CONTRACTS	
(In Millions)	**DECEMBER 31, 2020**	DECEMBER 31, 2019	**DECEMBER 31, 2020**	DECEMBER 31, 2019
Debt Securities				
Available for Sale	**$ 33.0**	$ 487.1	**$ 27.1**	$ 14.4

The secured parties to these transactions have the right to repledge or sell the securities as it relates to $33.5 million and $487.2 million of the pledged collateral as of December 31, 2020 and 2019, respectively.

Northern Trust accepts financial assets as collateral that it is and is not permitted to repledge or sell. The collateral is generally obtained under certain reverse repurchase agreements and derivative contracts. The following table presents the fair value of securities accepted as collateral. There was no repledged or sold collateral at December 31, 2020 or 2019.

TABLE 137: ACCEPTED COLLATERAL

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019
Collateral that may be repledged or sold		
Reverse repurchase agreements	**$ 1,179.8**	$ 707.8
Derivative contracts	**0.9**	16.8
Collateral that may not be repledged or sold		
Reverse repurchase agreements	**500.0**	—

Deposits maintained to meet Federal Reserve Bank reserve requirements averaged $0.4 billion in 2020 as compared to $1.5 billion in 2019. As a result of the economic environment arising from the COVID-19 pandemic, the Federal Reserve reduced the reserve requirement to zero percent on March 26, 2020.

Note 31 – Restrictions on Subsidiary Dividends and Loans or Advances

Various federal and state statutory provisions limit the amount of dividends the Bank can pay to the Corporation without regulatory approval. Approval of the Federal Reserve Board is required for payment of any dividend by a state-chartered bank that is a member of the Federal Reserve System if the total of all dividends declared by the bank in any calendar year would exceed the total of its retained net income (as defined by regulatory agencies) for that year combined with its retained net income for the preceding two years. In addition, a state member bank may not pay a dividend in an amount greater than its "undivided profits," as defined, without regulatory and stockholder approval.

Under Illinois law, an Illinois state bank, prior to paying a dividend, must carry over to surplus at least one-tenth of its net profits since the date of the declaration of the last preceding dividend, until the bank's surplus is equal to its capital. In addition, an Illinois state bank may not pay any dividend in an amount greater than its net profits then on hand, after deduction of losses and bad debts (defined as debts due to a state bank on which interest is past due and unpaid for a period of six months or more, unless the same are well secured and in the process of collection).

The Bank is also prohibited under federal law from paying any dividends if the Bank is undercapitalized or if the payment of the dividends would cause the Bank to become undercapitalized. In addition, the federal regulatory agencies are authorized to prohibit a bank or bank holding company from engaging in an unsafe or unsound banking practice. The payment of dividends could, depending on the financial condition of the Bank, be deemed to constitute an unsafe or unsound practice. The Dodd-Frank Wall Street Reform and Consumer Protection Act and Basel III impose additional restrictions on the ability of banking institutions to pay dividends (e.g., the Corporation may pay dividends only in accordance with the capital plan rules and capital adequacy standards of the Federal Reserve).

Under federal law, financial transactions by the Bank, the Corporation's insured banking subsidiary, with the Corporation and its affiliates that are in the form of loans or extensions of credit, investments, guarantees, derivative transactions, repurchase agreements, securities lending transactions or purchases of assets, are restricted. These transactions must be on terms and conditions that are, or in good faith would be, offered to non-affiliated companies (i.e. on terms not less favorable to the Bank than market terms). Further, extensions of credit must be secured fully with qualifying collateral and are limited to 10% of the Bank's capital and surplus for transactions with a single affiliate and to 20% of the Bank's capital and surplus with all affiliates. Other state and federal laws may limit the transfer of funds by the Corporation's banking subsidiaries to the Corporation and certain of its affiliates.

Note 32 – Reporting Segments and Related Information

Segment Information. Northern Trust is organized around its two client-focused reporting segments: C&IS and Wealth Management. Asset management and related services are provided to C&IS and Wealth Management clients primarily by the Asset Management business. The revenue and expenses of Asset Management and certain other support functions are allocated fully to C&IS and Wealth Management.

Reporting segment financial information, presented on an internal management-reporting basis, is determined by accounting systems used to allocate revenue and expense to each segment, and incorporates processes for allocating assets, liabilities, equity and the applicable interest income and expense utilizing a funds transfer pricing (FTP) methodology. Under the methodology, assets and liabilities receive a funding charge or credit that considers interest rate risk, liquidity risk, and other product characteristics on an instrument level. Equity is allocated to the reporting segments based on a variety of factors including, but not limited to, risk, regulatory considerations, and internal metrics. Allocations of capital and certain corporate expense may not be representative of levels that would be required if the segments were independent entities. The accounting policies used for management reporting are consistent with those described in Note 1, "Summary of Significant Accounting Policies." Transfers of income and expense items are recorded at cost; there is no consolidated profit or loss on sales or transfers between reporting segments. Northern Trust's presentations are not necessarily consistent with similar information for other financial institutions.

Effective January 1, 2019, Northern Trust implemented several enhancements to its FTP methodology, including the allocation of contingent liquidity charges to C&IS and Wealth Management client instruments and products. These methodology enhancements affect the results of each reporting segment. Due to the lack of historical information, segment results for periods ended prior to January 1, 2019 have not been revised to reflect the methodology enhancements.

Also effective January 1, 2019, revenues, expenses and average assets are allocated to C&IS and Wealth Management with the exception of non-recurring activities such as certain costs associated with acquisitions, divestitures, litigation, restructuring, and tax adjustments not directly attributable to a specific reporting segment.

For reporting periods ended prior to January 1, 2019, income and expense associated with the wholesale funding activities and investment portfolios of the Corporation and the Bank, as well as certain corporate-based expense, executive-level compensation and nonrecurring items, were not allocated to C&IS and Wealth Management, and were reported in Treasury and Other.

Reporting segment results are subject to reclassification when organizational changes are made. The results are also subject to refinements in revenue and expense allocation methodologies, which are typically reflected on a prospective basis.

The following tables reflect the earnings contribution and average assets of Northern Trust's reporting segments for the years ended December 31, 2020, 2019, and 2018.

TABLE 138: CORPORATE & INSTITUTIONAL SERVICES RESULTS OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31,		
($ In Millions)	**2020**	2019	2018
Noninterest Income			
Trust, Investment and Other Servicing Fees	**$ 2,321.6**	$ 2,211.5	$ 2,173.1
Foreign Exchange Trading Income	**276.3**	232.2	233.4
Other Noninterest Income	**222.5**	178.2	183.0
Total Noninterest Income	**2,820.4**	2,621.9	2,589.5
Net Interest Income[(1)]	**665.5**	918.7	992.2
Revenue[(1)]	**3,485.9**	3,540.6	3,581.7
Provision for Credit Losses	**38.1**	1.9	1.9
Noninterest Expense	**2,752.7**	2,605.5	2,421.4
Income before Income Taxes[(1)]	**695.1**	933.2	1,158.4
Provision for Income Taxes[(1)]	**174.4**	219.4	255.3
Net Income	**$ 520.7**	$ 713.8	$ 903.1
Percentage of Consolidated Net Income	**43 %**	48 %	58 %
Average Assets	**$ 104,790.6**	$ 87,557.1	$ 82,996.5

[(1)] *Non-GAAP financial measures stated on an FTE basis.*

TABLE 139: WEALTH MANAGEMENT RESULTS OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31,		
($ In Millions)	**2020**	2019	2018
Noninterest Income			
Trust, Investment and Other Servicing Fees	**$ 1,673.4**	$ 1,640.6	$ 1,580.6
Foreign Exchange Trading Income	**14.1**	18.7	4.2
Other Noninterest Income	**168.0**	131.1	102.7
Total Noninterest Income	**1,855.5**	1,790.4	1,687.5
Net Interest Income[(1)]	**812.1**	792.0	816.5
Revenue[(1)]	**2,667.6**	2,582.4	2,504.0
Provision for Credit Losses	**86.9**	(16.4)	(16.4)
Noninterest Expense	**1,559.7**	1,531.6	1,460.0
Income before Income Taxes[(1)]	**1,021.0**	1,067.2	1,060.4
Provision for Income Taxes[(1)]	**291.8**	271.1	262.1
Net Income	**$ 729.2**	$ 796.1	$ 798.3
Percentage of Consolidated Net Income	**60 %**	53 %	51 %
Average Assets	**$ 32,020.5**	$ 29,994.3	$ 26,163.7

[(1)] *Non-GAAP financial measures stated on an FTE basis.*

TABLE 140: TREASURY AND OTHER RESULTS OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31,		
($ In Millions)	**2020**	2019	2018
Noninterest Income	**$ (18.3)**	$ (17.1)	$ 60.5
Net Interest Income[(1)]	**—**	—	(144.8)
Revenue[(1)]	**(18.3)**	(17.1)	(84.3)
Noninterest Expense	**35.8**	6.4	135.5
Income (Loss) before Income Taxes[(1)]	**(54.1)**	(23.5)	(219.8)
Provision (Benefit) for Income Taxes[(1)]	**(13.5)**	(5.8)	(74.8)
Net Income	**$ (40.6)**	$ (17.7)	$ (145.0)
Percentage of Consolidated Net Income	**(3)%**	(1)%	(9)%
Average Assets	**$ —**	$ —	$ 13,786.4

[(1)] *Non-GAAP financial measures stated on an FTE basis.*

TABLE 141: CONSOLIDATED FINANCIAL INFORMATION

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
Noninterest Income			
Trust, Investment and Other Servicing Fees	**$ 3,995.0**	$ 3,852.1	$ 3,753.7
Foreign Exchange Trading Income	**290.4**	250.9	307.2
Other Noninterest Income	**372.2**	292.2	276.6
Total Noninterest Income	**4,657.6**	4,395.2	4,337.5
Net Interest Income[(1)]	**1,477.6**	1,710.7	1,663.9
Revenue[(1)]	**6,135.2**	6,105.9	6,001.4
Provision for Credit Losses	**125.0**	(14.5)	(14.5)
Noninterest Expense	**4,348.2**	4,143.5	4,016.9
Income before Income Taxes[(1)]	**1,662.0**	1,976.9	1,999.0
Provision for Income Taxes[(1)]	**452.7**	484.7	442.6
Net Income	**$ 1,209.3**	$ 1,492.2	$ 1,556.4
Average Assets	**$ 136,811.1**	$ 117,551.4	$ 122,946.6

[(1)] Non-GAAP financial measures stated on an FTE basis. The consolidated figures include $34.4 million, $32.8 million, and $41.2 million, of FTE adjustments for 2020, 2019, and 2018, respectively.

Further discussion of reporting segment results is provided within the “Reporting Segments and Related Information” section of Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Geographic Area Information. Northern Trust’s non-U.S. activities are primarily related to its asset servicing, asset management, foreign exchange, cash management, and commercial banking businesses. The operations of Northern Trust are managed on a reporting segment basis and include components of both U.S and non-U.S. source income and assets. Non-U.S. source income and assets are not separately identified in Northern Trust’s internal management reporting system. However, Northern Trust is required to disclose non-U.S. activities based on the domicile of the customer. Due to the complex and integrated nature of Northern Trust’s activities, it is difficult to segregate with precision revenues, expenses and assets between U.S. and non-U.S.-domiciled customers. Therefore, certain subjective estimates and assumptions have been made to allocate revenues, expenses and assets between U.S. and non-U.S. operations.

For purposes of this disclosure, all foreign exchange trading income has been allocated to non-U.S. operations. Interest expense is allocated to non-U.S. operations based on specifically matched or pooled funding. Allocations of indirect noninterest expenses, when made, are based on various methods such as time, space, and number of employees.

The following table summarizes Northern Trust’s performance based on the allocation process described above without regard to guarantors or the location of collateral.

TABLE 142: DISTRIBUTION OF TOTAL ASSETS AND OPERATING PERFORMANCE

(In Millions)	TOTAL ASSETS	TOTAL REVENUE[(1)]	INCOME BEFORE INCOME TAXES	NET INCOME
2020				
Non-U.S.	**$ 38,393.8**	**$ 1,737.6**	**$ 404.0**	**$ 302.6**
U.S.	**131,610.1**	**4,363.2**	**1,223.6**	**906.7**
Total	**$ 170,003.9**	**$ 6,100.8**	**$ 1,627.6**	**$ 1,209.3**
2019				
Non-U.S.	$ 27,888.6	$ 1,889.5	$ 600.0	$ 451.0
U.S.	108,939.8	4,183.6	1,344.1	1,041.2
Total	$ 136,828.4	$ 6,073.1	$ 1,944.1	$ 1,492.2
2018				
Non-U.S.	$ 32,712.9	$ 2,018.1	$ 786.4	$ 625.7
U.S.	99,499.6	3,942.1	1,171.4	930.7
Total	$ 132,212.5	$ 5,960.2	$ 1,957.8	$ 1,556.4

[(1)] Total revenue is comprised of net interest income and noninterest income.

Note 33 – Regulatory Capital Requirements

Northern Trust Corporation and the Bank are subject to various regulatory capital requirements administered by the federal bank regulatory authorities. Under these requirements, banks must maintain specific risk-based and leverage ratios in order to be classified as “well-capitalized.” The regulatory capital requirements impose certain restrictions upon banks that meet minimum capital requirements but are not “well-capitalized” and obligate the federal bank regulatory authorities to take “prompt corrective action” with respect to banks that do not maintain such minimum ratios. Such prompt corrective action could have a direct material effect on a bank’s financial statements.

As of December 31, 2020 and 2019, the Bank had capital ratios above the levels required for classification as a “well-capitalized” institution and had not received any regulatory notification of a lower classification. As a result of the stress test results published by the Federal Reserve on June 25, 2020, Northern Trust’s stress capital buffer requirement for the 2020 Capital Plan cycle was set at 2.5%. The 2020 stress capital buffer became effective October 1, 2020, and results in a common equity tier 1 capital ratio minimum requirement of 7.0%.

Additionally, Northern Trust’s subsidiary banks located outside the U.S. are subject to regulatory capital requirements in the jurisdictions in which they operate. As of December 31, 2020 and 2019, Northern Trust’s non-U.S. banking subsidiaries had capital ratios above their specified minimum requirements. There were no conditions or events since December 31, 2020, that management believes have adversely affected the capital categorization of any Northern Trust subsidiary bank.

The following table provides capital ratios for the Corporation and the Bank determined by Basel III phased in requirements.

TABLE 143: RISK-BASED AND LEVERAGE CAPITAL AMOUNTS AND RATIOS

($ In Millions)	DECEMBER 31, 2020 STANDARDIZED APPROACH		DECEMBER 31, 2020 ADVANCED APPROACH		DECEMBER 31, 2019 STANDARDIZED APPROACH		DECEMBER 31, 2019 ADVANCED APPROACH	
	BALANCE	RATIO	BALANCE	RATIO	BALANCE	RATIO	BALANCE	RATIO
Common Equity Tier 1 Capital								
Northern Trust Corporation	**$ 9,962.2**	**12.8 %**	**$ 9,962.2**	**13.4 %**	$ 8,898.7	12.7 %	$ 8,898.7	13.2 %
The Northern Trust Company	**10,003.3**	**13.0**	**10,003.3**	**13.8**	8,476.0	12.3	8,476.0	13.0
Minimum to qualify as well-capitalized:								
Northern Trust Corporation	**N/A**	**N/A**	**N/A**	**N/A**	N/A	N/A	N/A	N/A
The Northern Trust Company	**4,994.4**	**6.5**	**4,717.1**	**6.5**	4,472.0	6.5	4,230.0	6.5
Tier 1 Capital								
Northern Trust Corporation	**10,822.2**	**13.9**	**10,822.2**	**14.5**	10,152.0	14.5	10,152.0	15.0
The Northern Trust Company	**10,003.3**	**13.0**	**10,003.3**	**13.8**	8,476.0	12.3	8,476.0	13.0
Minimum to qualify as well-capitalized:								
Northern Trust Corporation	**4,659.7**	**6.0**	**4,467.6**	**6.0**	4,205.3	6.0	4,051.6	6.0
The Northern Trust Company	**6,147.0**	**8.0**	**5,805.6**	**8.0**	5,504.0	8.0	5,206.2	8.0
Total Capital								
Northern Trust Corporation	**12,085.7**	**15.6**	**11,825.8**	**15.9**	11,456.7	16.3	11,332.3	16.8
The Northern Trust Company	**11,123.1**	**14.5**	**10,863.3**	**15.0**	9,610.4	14.0	9,486.0	14.6
Minimum to qualify as well-capitalized:								
Northern Trust Corporation	**7,766.2**	**10.0**	**7,446.0**	**10.0**	7,008.8	10.0	6,752.7	10.0
The Northern Trust Company	**7,683.7**	**10.0**	**7,257.0**	**10.0**	6,880.1	10.0	6,507.7	10.0
Tier 1 Leverage								
Northern Trust Corporation	**10,822.2**	**7.6**	**10,822.2**	**7.6**	10,152.0	8.7	10,152.0	8.7
The Northern Trust Company	**10,003.3**	**7.0**	**10,003.3**	**7.0**	8,476.0	7.3	8,476.0	7.3
Minimum to qualify as well-capitalized:								
Northern Trust Corporation	**N/A**	**N/A**	**N/A**	**N/A**	N/A	N/A	N/A	N/A
The Northern Trust Company	**7,105.0**	**5.0**	**7,105.0**	**5.0**	5,835.4	5.0	5,835.4	5.0
Supplementary Leverage(1)								
Northern Trust Corporation	**N/A**	**N/A**	**10,822.2**	**8.6**	N/A	N/A	10,152.0	7.6
The Northern Trust Company	**N/A**	**N/A**	**10,003.3**	**7.7**	N/A	N/A	8,476.0	6.4
Minimum to qualify as well-capitalized:								
Northern Trust Corporation	**N/A**	**N/A**	**N/A**	**N/A**	N/A	N/A	N/A	N/A
The Northern Trust Company	**N/A**	**N/A**	**3,883.4**	**3.0**	N/A	N/A	3,983.6	3.0

(1) In November 2019, the Federal Reserve and other U.S. federal banking agencies adopted a final rule that established a deduction for central bank deposits from the total leverage exposures of custodial banking organizations, including Northern Trust Corporation and The Northern Trust Company, equal to the lesser of (i) the total amount of funds the custodial banking organization and its consolidated subsidiaries have on deposit at qualifying central banks and (ii) the total amount of client funds on deposit at the custodial banking organization that are linked to fiduciary or custodial and safekeeping accounts. The rule became effective on April 1, 2020.

Further, on April 1, 2020, the Federal Reserve issued an interim final rule that requires bank holding companies, including Northern Trust Corporation, to deduct, on a temporary basis, deposits with the Federal Reserve and investments in U.S. Treasury securities from their total leverage exposure. The U.S. Treasury securities deduction is applied in addition to the central bank deposits relief referred to above. This rule became effective on April 1, 2020 and will remain in effect through the first quarter of 2021. On May 15, 2020, the U.S. federal banking agencies released an interim final rule that permits insured depository institutions of bank holding companies also to temporarily exclude deposits with the Federal Reserve and investments in U.S. Treasury securities from their total leverage exposure. The Northern Trust Company did not elect to take this deduction.

The supplementary leverage ratios at December 31, 2020 for the Northern Trust Corporation and The Northern Trust Company reflect the impact of these final rules.

The U.S. banking agencies' capital rules are based on the Basel III framework. Under the Basel III framework, these rules are currently being phased in, and will come into full effect by January 1, 2022. Northern Trust Corporation's remaining elements of the rules subject to the phase in requirements are not material to regulatory capital ratios.

Under the final Basel III rules, the Corporation and the Bank are required to calculate and publicly disclose risk-based capital ratios using two methodologies: an advanced approach and a standardized approach. Under the advanced approach, credit risk weighted assets (RWA) are based on internal credit models and parameters. Additionally, the advanced approach incorporates operational risk RWA. Under the standardized approach, RWA are based on supervisory prescribed risk weights that are primarily dependent on counterparty type and asset class.

Pursuant to the Federal Reserve Board's implementation in the final Basel III rules of a provision of the Dodd-Frank Act, the capital adequacy of the Corporation and the Bank is assessed based on the lower of the advanced approach or standardized approach capital ratios.

Note 34 – Northern Trust Corporation (Corporation only)

Condensed financial information is presented in the following tables. Investments in wholly-owned subsidiaries are carried on the equity method of accounting.

TABLE 144: CONDENSED BALANCE SHEETS

	DECEMBER 31,	
(In Millions)	**2020**	2019
ASSETS		
Cash on Deposit with Subsidiary Bank	**$ 2,516.0**	$ 2,559.1
Advances to Wholly-Owned Subsidiaries – Banks	**2,670.0**	2,370.0
Investments in Wholly-Owned Subsidiaries – Banks	**10,799.9**	9,349.8
– Nonbank	**172.8**	163.0
Other Assets	**900.9**	1,444.7
Total Assets	**$ 17,059.6**	$ 15,886.6
LIABILITIES		
Senior Notes	**$ 3,122.4**	$ 2,573.0
Long Term Debt	**1,189.3**	1,148.1
Floating Rate Capital Debt	**277.8**	277.7
Other Liabilities	**781.8**	796.8
Total Liabilities	**5,371.3**	4,795.6
STOCKHOLDERS' EQUITY		
Preferred Stock	**884.9**	1,273.4
Common Stock	**408.6**	408.6
Additional Paid-in Capital	**963.6**	1,013.1
Retained Earnings	**12,207.7**	11,656.7
Accumulated Other Comprehensive Income (Loss)	**428.0**	(194.7)
Treasury Stock	**(3,204.5)**	(3,066.1)
Total Stockholders' Equity	**11,688.3**	11,091.0
Total Liabilities and Stockholders' Equity	**$ 17,059.6**	$ 15,886.6

TABLE 145: CONDENSED STATEMENTS OF INCOME

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
OPERATING INCOME			
Dividends – Bank Subsidiaries	$ **900.0**	$ 2,024.1	$ 1,200.9
– Nonbank Subsidiaries	**—**	0.4	—
Intercompany Interest and Other Charges	**46.5**	115.1	91.9
Interest and Other Income	**19.1**	20.2	(8.7)
Total Operating Income	**965.6**	2,159.8	1,284.1
OPERATING EXPENSES			
Interest Expense	**104.2**	121.6	97.3
Other Operating Expenses	**26.2**	28.6	17.0
Total Operating Expenses	**130.4**	150.2	114.3
Income before Income Taxes and Equity in Undistributed Net Income of Subsidiaries	**835.2**	2,009.6	1,169.8
Benefit for Income Taxes	**28.2**	24.3	24.6
Income before Equity in Undistributed Net Income of Subsidiaries	**863.4**	2,033.9	1,194.4
Equity in Undistributed Net Income of Subsidiaries – Banks	**326.0**	(559.9)	336.7
– Nonbank	**19.9**	18.2	25.3
Net Income	$ **1,209.3**	$ 1,492.2	$ 1,556.4
Preferred Stock Dividends	**56.2**	46.4	46.4
Net Income Applicable to Common Stock	$ **1,153.1**	$ 1,445.8	$ 1,510.0

TABLE 146: CONDENSED STATEMENTS OF CASH FLOWS

(In Millions)	FOR THE YEAR ENDED DECEMBER 31, 2020	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES			
Net Income	$ **1,209.3**	$ 1,492.2	$ 1,556.4
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities			
Equity in Undistributed Net Income of Subsidiaries	**(345.9)**	541.7	(362.0)
Change in Prepaid Expenses	**398.5**	(400.4)	(0.6)
Change in Accrued Income Taxes	**3.7**	114.1	(141.8)
Other Operating Activities, net	**300.3**	141.9	125.6
Net Cash Provided by Operating Activities	**1,565.9**	1,889.5	1,177.6
CASH FLOWS FROM INVESTING ACTIVITIES			
Proceeds from Sale, Maturity and Redemption of Debt Securities – Available for Sale	**—**	—	1.0
Investments in and Advances to Subsidiaries, net	**(800.0)**	540.0	(436.5)
Acquisition of a Business, Net of Cash Received	**—**	—	(31.2)
Other Investing Activities, net	**1.8**	3.7	(3.1)
Net Cash (Used in) Provided by Investing Activities	**(798.2)**	543.7	(469.8)
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from Senior Notes	**993.2**	498.0	497.9
Repayments of Senior Notes	**(508.6)**	—	—
Redemption of Preferred Stock - Series C	**(400.0)**	—	—
Proceeds from Issuance of Preferred Stock - Series E	**—**	392.5	—
Treasury Stock Purchased	**(299.8)**	(1,100.2)	(924.3)
Net Proceeds from Stock Options	**19.5**	44.0	32.6
Cash Dividends Paid on Common Stock	**(584.6)**	(529.7)	(405.4)
Cash Dividends Paid on Preferred Stock	**(45.9)**	(46.4)	(46.4)
Other Financing Activities, net	**15.4**	0.9	2.1
Net Cash (Used In) Provided by Financing Activities	**(810.8)**	(740.9)	(843.5)
Net Change in Cash on Deposit with Subsidiary Bank	**(43.1)**	1,692.3	(135.7)
Cash on Deposit with Subsidiary Bank at Beginning of Year	**2,559.1**	866.8	1,002.5
Cash on Deposit with Subsidiary Bank at End of Year	$ **2,516.0**	$ 2,559.1	$ 866.8

ITEM 9 – CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A – CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

As of December 31, 2020, the Corporation's management, with the participation of the Corporation's Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of the Corporation's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) that are designed to ensure that information required to be disclosed by the Corporation in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Based on such evaluation, such officers have concluded that, as of December 31, 2020, the Corporation's disclosure controls and procedures are effective.

Management's Report on Internal Control Over Financial Reporting

Management of the Corporation is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) to provide reasonable assurance to the Corporation's management and Board of Directors regarding the preparation of reliable published financial statements. This internal control includes monitoring mechanisms, and actions are taken to correct deficiencies identified.

Management assessed the Corporation's internal control over financial reporting as of December 31, 2020, based on the 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, as of December 31, 2020, the Corporation maintained effective internal control over financial reporting. Additionally, KPMG LLP, the independent registered public accounting firm that audited the Corporation's consolidated financial statements as of, and for the year ended, December 31, 2020, included in this Annual Report on Form 10-K, has issued an attestation report on the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2020.

Changes in Internal Control Over Financial Reporting

There have been no changes in the Corporation's internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15 and 15d-15 under the Exchange Act during the last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Corporation's internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

TO THE STOCKHOLDERS AND BOARD OF DIRECTORS OF NORTHERN TRUST CORPORATION:

Opinion on Internal Control Over Financial Reporting

We have audited Northern Trust Corporation's and subsidiaries' (the Corporation) internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Corporation as of December 31, 2020 and 2019, the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements), and our report dated February 23, 2021 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Corporation's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

KPMG LLP

CHICAGO, ILLINOIS
FEBRUARY 23, 2021

ITEM 9B – OTHER INFORMATION

Not applicable.

PART III

ITEM 10 – DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information called for by this item is incorporated by reference to “Supplemental Item – Information About Our Executive Officers” in Part I of this Annual Report on Form 10-K, as well as the following sections of the Corporation’s definitive Proxy Statement for the 2021 Annual Meeting of Stockholders: “Item 1 – Election of Directors,” “Information about the Nominees for Director,” “Security Ownership by Directors and Executive Officers,” “Corporate Governance – Code of Business Conduct and Ethics,” “Corporate Governance – Director Nominations and Qualifications and Proxy Access,” “Board and Board Committee Information – Audit Committee” and “Board and Board Committee Information – Board Committees.”

ITEM 11 – EXECUTIVE COMPENSATION

The information called for by this item is incorporated herein by reference to the “Compensation Discussion and Analysis,” “Compensation and Benefits Committee Report,” “Executive Compensation,” and “Director Compensation” sections of the Corporation’s definitive Proxy Statement for the 2021 Annual Meeting of Stockholders.

ITEM 12 – SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information called for by this item is incorporated herein by reference to the “Security Ownership by Directors and Executive Officers,” “Security Ownership of Certain Beneficial Owners,” and “Equity Compensation Plan Information” sections of the Corporation’s definitive Proxy Statement for the 2021 Annual Meeting of Stockholders.

ITEM 13 – CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information called for by this item is incorporated herein by reference to the “Board and Board Committee Information,” “Corporate Governance – Director Independence” and the “Corporate Governance – Related Person Transactions Policy” sections of the Corporation’s definitive Proxy Statement for the 2021 Annual Meeting of Stockholders.

ITEM 14 – PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information called for by this item is incorporated herein by reference to the “Audit Matters” section of the Corporation’s definitive Proxy Statement for the 2021 Annual Meeting of Stockholders.

PART IV

ITEM 15 – EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

ITEM 15(a)(1) AND (2) – NORTHERN TRUST CORPORATION AND SUBSIDIARIES LIST OF FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULES

The following financial statements of the Corporation and its Subsidiaries included in Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K are incorporated herein by reference.

For Northern Trust Corporation and Subsidiaries:
Consolidated Balance Sheets - December 31, 2020 and 2019
Consolidated Statements of Income - Years Ended December 31, 2020, 2019, and 2018
Consolidated Statements of Comprehensive Income - Years Ended December 31, 2020, 2019, and 2018
Consolidated Statements of Changes in Stockholders' Equity - Years Ended December 31, 2020, 2019, and 2018
Consolidated Statements of Cash Flows - Years Ended December 31, 2020, 2019, and 2018
Notes to Consolidated Financial Statements
Report of Independent Registered Public Accounting Firm

Financial statement schedules have been omitted for the reason that they are not required or are not applicable.

The Quarterly Financial Data (Unaudited) of the Corporation included in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" is incorporated herein by reference.

ITEM 15(a)(3) – EXHIBITS

Exhibit Number	Description
3.1	Restated Certificate of Incorporation of Northern Trust Corporation, as amended to date (incorporated herein by reference to Exhibit 3.1 to the Corporation's Current Report on Form 8-K filed April 19, 2006).
3.2	Certificate of Designation of Series D Non-Cumulative Perpetual Preferred Stock of Northern Trust Corporation, dated August 4, 2016 (incorporated herein by reference to Exhibit 3.1 to the Corporation's Current Report on Form 8-K filed August 8, 2016).
3.3	Certificate of Designation of Series E Non-Cumulative Perpetual Preferred Stock of Northern Trust Corporation, dated October 31, 2019 (incorporated herein by reference to Exhibit 3.1 to the Corporation's Current Report on Form 8-K filed November 5, 2019).
3.4	By-laws of Northern Trust Corporation, as amended February 19, 2019 (incorporated herein by reference to Exhibit 3.1 to the Corporation's Current Report on Form 8-K filed February 19, 2019).
4.1	Deposit Agreement, dated August 8, 2016, among Northern Trust Corporation, Wells Fargo Bank, N.A., as depositary (which, effective February 1, 2018, was succeeded by Equiniti Trust Company), and the holders from time to time of the depositary receipts described therein (incorporated by reference to Exhibit 4.2 to the Corporation's Current Report on Form 8-K filed August 8, 2016).
4.2	Deposit Agreement, dated November 5, 2019, among Northern Trust Corporation, Equiniti Trust Company, as depositary, and the holders from time to time of the depositary receipts described therein (incorporated by reference to Exhibit 4.2 to the Corporation's Current Report on Form 8-K filed November 5, 2019).
4.3	Description of securities registered pursuant to Section 12 of the Securities Exchange Act of 1934.
4.4	Certain instruments defining the rights of the holders of long-term debt of the Corporation and certain of its subsidiaries, none of which authorize a total amount of indebtedness in excess of 10% of the total assets of the Corporation and its subsidiaries on a consolidated basis, have not been filed as exhibits. The Corporation hereby agrees to furnish a copy of any of these agreements to the SEC upon request.

Exhibit Number	Description
10.1**	Deferred Compensation Plans Trust Agreement, dated May 11, 1998, between Northern Trust Corporation and Harris Trust and Savings Bank as Trustee (which, effective August 31, 1999, was succeeded by U.S. Trust Company, N.A., which effective June 1, 2009, was succeeded by Evercore Trust Company, N.A., and, which, effective October 19, 2017, was succeeded by Newport Trust Company) regarding the Supplemental Employee Stock Ownership Plan for Employees of The Northern Trust Company, the Supplemental Thrift-Incentive Plan for Employees of The Northern Trust Company, the Supplemental Pension Plan for Employees of The Northern Trust Company, and the Northern Trust Corporation Deferred Compensation Plan (incorporated herein by reference to Exhibit 10(iv) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended June 30, 1998).
(i)**	Amendment, dated August 31, 1999 (incorporated herein by reference to Exhibit 10(vi) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended September 30, 1999).
(ii)**	Second Amendment, dated as of May 16, 2000 (incorporated herein by reference to Exhibit 10(v) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2000).
10.2**	Northern Trust Corporation Supplemental Employee Stock Ownership Plan, as amended and restated effective as of January 1, 2008 (incorporated herein by reference to Exhibit 10(vi) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2008).
10.3**	Northern Trust Corporation Supplemental Thrift-Incentive Plan, as amended and restated effective as of January 1, 2008 (incorporated herein by reference to Exhibit 10(vii) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2008).
(i)**	Amendment Number One, dated October 29, 2009 and effective January 1, 2010 (incorporated herein by reference to Exhibit 10(vi)(1) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2009).
(ii)**	Amendment Number Two, dated August 6, 2015 and effective January 1, 2015 (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2015).
10.4**	Northern Trust Corporation Supplemental Pension Plan, as amended and restated effective January 1, 2009 (incorporated herein by reference to Exhibit 10(viii) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2008).
10.5**	Northern Trust Corporation Deferred Compensation Plan, as amended and restated effective as of November 1, 2017 (incorporated herein by reference to Exhibit 10.5 to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017).
10.6**	Amended and Restated Northern Trust Corporation 2002 Stock Plan, effective as of January 1, 2008 (incorporated herein by reference to Exhibit 10(xiv) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2008).
(i)**	Form of 2011 Executive Stock Option Terms and Conditions (incorporated herein by reference to Exhibit 10(v) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2011).
(ii)**	Form of 2012 Executive Stock Option Award Terms and Conditions (incorporated herein by reference to Exhibit 10.7(xix) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2011).
10.7**	Northern Trust Corporation 2012 Stock Plan (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Current Report on Form 8-K filed April 19, 2012).
(i)**	Form of Director Stock Unit Agreement (incorporated herein by reference to Exhibit 10(iii) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2012).
(ii)**	Form of Director Prorated Stock Agreement (incorporated herein by reference to Exhibit 10(iv) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2012).
(iii)**	Form of New Director Stock Unit Agreement (incorporated herein by reference to Exhibit 10(v) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2012).
(iv)**	Form of 2012 Executive Stock Option Terms and Conditions (incorporated herein by reference to Exhibit 10(i) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2012).

Exhibit Number	Description
(v)**	Form of 2013 Executive Stock Option Terms and Conditions (incorporated herein by reference to Exhibit 10.7(xii) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2012).
(vi)**	Form of 2014 Executive Stock Option Terms and Conditions (incorporated herein by reference to Exhibit 10.7(xi) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 2013).
(vii)**	Form of 2017 Stock Option Award Terms and Conditions, as amended (incorporated herein by reference to Exhibit 10.7(x) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017).
(viii)**	Form of 2017 Stock Unit Award Terms and Conditions, as amended (incorporated herein by reference to Exhibit 10.7(xi) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017).
10.8**	Northern Trust Corporation Management Performance Plan, as amended and restated effective October 16, 2012 (incorporated herein by reference to Exhibit 10(viii) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2012).
10.9**	Northern Trust Corporation 1997 Stock Plan for Non-Employee Directors (incorporated herein by reference to Exhibit 10(xix) to the Corporation’s Annual Report on Form 10-K for the fiscal year ended December 31, 1998).
10.10**	Northern Trust Corporation 1997 Deferred Compensation Plan for Non-Employee Directors, as amended and restated effective as of July 15, 2014 (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2014).
10.11**	Northern Trust Corporation 2018 Deferred Compensation Plan for Non-Employee Directors (incorporated herein by reference to Exhibit 10.11 to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017).
10.12**	Northern Trust Corporation Key Officer Change in Control Severance Plan (incorporated herein by reference to Exhibit 10.2 to the Corporation’s Current Report on Form 8-K filed April 28, 2017).
10.13**	Northern Trust Corporation Executive Change in Control Severance Plan (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Current Report on Form 8-K filed April 28, 2017).
10.14**	Form of Non-Solicitation Agreement and Confidentiality Agreement (incorporated herein by reference to Exhibit 10(iii) to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2009).
10.15**	Northern Trust Corporation 2017 Long-Term Incentive Plan (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Current Report on Form 8-K filed April 26, 2017).
(i)**	Form of Director Stock Unit Agreement (incorporated herein by reference to Exhibit 10.10 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2017).
(ii)**	Form of Director Stock Unit Agreement (prorated) (incorporated herein by reference to Exhibit 10.11 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2017).
(iii)**	Form of 2018 Performance Stock Unit Award Terms and Conditions (incorporated herein by reference to Exhibit 10.3 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
(iv)**	Form of 2019 Performance Stock Unit Award Terms and Conditions (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2019).
(v)**	Form of 2020 Performance Stock Unit Award Terms and Conditions (incorporated herein by reference to Exhibit 10.1 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020).
(vi)**	Form of 2018 Stock Unit Award Terms and Conditions (incorporated herein by reference to Exhibit 10.4 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
(vii)**	Form of 2019 Stock Unit Award Terms and Conditions (incorporated herein by reference to Exhibit 10.2 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2019).
(viii)**	Form of 2020 Stock Unit Award Terms and Conditions (incorporated herein by reference to Exhibit 10.2 to the Corporation’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020).

Exhibit Number	Description
10.16**	Northern Trust Corporation Executive Financial Consulting and Tax Preparation Services Plan, as amended and restated effective January 1, 2008 (which, effective October 1, 2018, was renamed the Northern Trust Corporation Wealth Planning and Tax Consulting Services Plan) (incorporated herein by reference to Exhibit 10 (xxxiii) to the Corporation's Annual Report on Form 10-K for the fiscal year ended December 31, 2007).
(i)**	First Amendment, dated and effective October 3, 2017 (incorporated herein by reference to Exhibit 10.18(i) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2019).
(ii)**	Second Amendment, dated September 27, 2019 and effective October 1, 2018 (incorporated herein by reference to Exhibit 10.18(ii) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2019).
10.17**	Northern Trust Corporation Non-Employee Director Compensation Plan, as amended.
10.18**	Northern Partners Incentive Plan, as amended and restated on February 16, 2021.
10.19**	Letter Agreement with Frederick H. Waddell, dated January 23, 2019 (incorporated herein by reference to Exhibit 10.26 to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2018).
10.20**	The Northern Trust Company Death Benefit Plan (incorporated herein by reference to Exhibit 10.1 to the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019).
(i)	Amendment Number One to The Northern Trust Company Death Benefit Plan, dated July 11, 2019 and effective May 17, 2019.
(ii)	Amendment Number Two to The Northern Trust Company Death Benefit Plan, dated July 29, 2019 and effective May 17, 2019.
(iii)	Amendment Number Three to The Northern Trust Company Death Benefit Plan, dated March 18, 2020 and effective May 17, 2019.
21	Subsidiaries of the Registrant.
23	Consent of Independent Registered Public Accounting Firm.
31.1	Rule 13a-14(a)/15d-14(a) Certification of CEO Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Rule 13a-14(a)/15d-14(a) Certification of CFO Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certifications of CEO and CFO Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	Includes the following financial and related information from the Corporation's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Changes in Stockholders' Equity, (v) the Consolidated Statements of Cash Flows, and (vi) Notes to Consolidated Financial Statements.
104	The cover page from this Annual Report on Form 10-K, formatted in Inline XBRL.

*** Indicates a management contract or a compensatory plan or agreement.*

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, as amended, the Registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 23, 2021

Northern Trust Corporation

(Registrant)

By: /s/ Michael G. O’Grady

Michael G. O’Grady

Chairman, President, and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the date indicated.

Signature	Capacity
/s/ Michael G. O'Grady *Michael G. O’Grady*	Chairman, President, and Chief Executive Officer (Principal Executive Officer)
/s/ Jason J. Tyler *Jason J. Tyler*	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Lauren Allnutt *Lauren Allnutt*	Executive Vice President and Controller (Principal Accounting Officer)
/s/ Linda Walker Bynoe *Linda Walker Bynoe*	Director
/s/ Susan Crown *Susan Crown*	Director
/s/ Dean M. Harrison *Dean M. Harrison*	Director
/s/ Jay L. Henderson *Jay L. Henderson*	Director
/s/ Marcy S. Klevorn *Marcy S. Klevorn*	Director
/s/ Siddharth N. (Bobby) Mehta *Siddharth N. (Bobby) Mehta*	Director

/s/ Jose Luis Prado	Director
Jose Luis Prado	
/s/ Thomas E. Richards	Director
Thomas E. Richards	
/s/ Martin P. Slark	Director
Martin P. Slark	
/s/ David H.B. Smith, Jr.	Director
David H.B. Smith, Jr.	
/s/ Donald Thompson	Director
Donald Thompson	
/s/ Charles A. Tribbett, III	Director
Charles A. Tribbett, III	

Date: February 23, 2021

Exhibit 31.1

Certification of CEO Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Michael G. O'Grady, certify that:

1. I have reviewed this report on Form 10-K for the year ended December 31, 2020 of Northern Trust Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer 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 23, 2021

/s/ Michael G. O'Grady

Michael G. O'Grady
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

Certification of CFO Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Jason J. Tyler, certify that:

1. I have reviewed this report on Form 10-K for the year ended December 31, 2020 of Northern Trust Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer 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 23, 2021

/s/ Jason J. Tyler

Jason J. Tyler
Chief Financial Officer
(Principal Financial Officer)

**Certifications of CEO and CFO 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 of Northern Trust Corporation (the "Corporation") on Form 10-K for the period ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Michael G. O'Grady, as Chief Executive Officer of the Corporation, and Jason J. Tyler, as Chief Financial Officer of the Corporation, each hereby certifies, 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 his knowledge, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) 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.

/s/ Michael G. O'Grady

Michael G. O'Grady
Chief Executive Officer
(Principal Executive Officer)
February 23, 2021

/s/ Jason J. Tyler

Jason J. Tyler
Chief Financial Officer
(Principal Financial Officer)
February 23, 2021

This certification accompanies the Report pursuant to section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed filed by Northern Trust Corporation for purposes of section 18 of the Securities Exchange Act of 1934, as amended.

BOARD OF DIRECTORS

Michael G. O’Grady
Chairman, President and Chief Executive Officer
Northern Trust Corporation

Linda Walker Bynoe
President and Chief Executive Officer
Telemat Limited LLC
Project management and consulting firm

Susan Crown
Chairman and Chief Executive Officer
Owl Creek Partners, LLC
Private equity firm
Chairman and Founder
Susan Crown Exchange Inc.
Social investment organization

Dean M. Harrison
President and Chief Executive Officer
Northwestern Memorial HealthCare
Primary teaching affiliate of Northwestern University Feinberg School of Medicine and parent corporation of Northwestern Memorial Hospital

Jay L. Henderson
Retired Vice Chairman, Client Service
PricewaterhouseCoopers LLP
Professional services firm

Marcy S. Klevorn
Retired Executive Vice President and President, Mobility
Ford Motor Company
Global automaker

Siddharth N. (Bobby) Mehta
Retired President and Chief Executive Officer
TransUnion
Global risk and information solutions provider

Jose Luis Prado
Chairman of the Board
Tropicale Foods Group
Manufacturer of frozen foods
Vice Chairman
Evans Food Group, Ltd.
Global food company

Thomas E. Richards
Retired President and Chief Executive Officer
CDW Corporation
Provider of integrated information technology solutions in the United States, Canada and the United Kingdom

Martin P. Slark
Retired Chief Executive Officer
Molex LLC
Manufacturer of electronic, electrical, and fiber optic interconnection products and systems

David H. B. Smith Jr.
Executive Vice President, Policy & Legal Affairs and General Counsel
Mutual Fund Directors Forum
Nonprofit membership organization for investment company directors

Donald Thompson
Founder and Chief Executive Officer
Cleveland Avenue, LLC
Food and beverage accelerator and investment company
Retired President and Chief Executive Officer
McDonald’s Corporation
Global foodservice retailer

Charles A. Tribbett III
Vice Chairman
Russell Reynolds Associates
Global executive recruiting firm

Advisory Director

Lord Charles D. Powell of Bayswater KCMG
Former private secretary and advisor on foreign affairs and defense to Prime Ministers Margaret Thatcher and John Major

MANAGEMENT GROUP

Michael G. O'Grady
Chairman, President and Chief Executive Officer

Robert P. Browne
Executive Vice President
Chief Investment Officer

Peter B. Cherecwich
President – Corporate & Institutional Services

Steven L. Fradkin
President – Wealth Management

Mark C. Gossett
Executive Vice President
Chief Risk Officer

Susan C. Levy
Executive Vice President
General Counsel and Corporate Secretary

Teresa A. Parker
Executive Vice President
President – Europe, Middle East and Africa

Thomas A. South
Executive Vice President
Chief Information Officer

Joyce M. St. Clair
Executive Vice President
Chief Human Resources Officer

Shundrawn A. Thomas
President – Asset Management

Jason J. Tyler
Executive Vice President
Chief Financial Officer

ANNUAL MEETING

The 2021 Annual Meeting of Stockholders will be held on Tuesday, April 20, 2021, at 10:30 A.M. (Central Time). If you plan to attend the Annual Meeting, please review the information regarding attendance contained in the proxy statement relating to the Annual Meeting.

STOCK LISTING

The common stock of Northern Trust Corporation is traded on the NASDAQ Global Select Market under the symbol “NTRS”.

STOCK TRANSFER AGENT, REGISTRAR, AND DIVIDEND DISBURSING AGENT

EQ Shareowner Services
1110 Centre Pointe Curve, Suite 101
Mendota Heights, MN 55120
General Phone Number: 1-800-468-9716
Internet Site: shareowneronline.com

AVAILABLE INFORMATION

Through our website at northerntrust.com, we make available free of charge our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all other reports and all amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after we file such material with, or furnish such material to, the SEC. The contents of our website, the website of the SEC or any other website referenced herein are not a part of this document.

INVESTOR RELATIONS

Please direct Investor Relations inquiries to:
Mark M. Bette, Senior Vice President, at
312-444-2301 or mark_bette@ntrs.com; or
Kelly M. Lernihan, Vice President, at
312-444-7214 or km235@ntrs.com.

NORTHERNTRUST.COM

Information about the Corporation, including financial performance and products and services, is available on Northern Trust’s website at northerntrust.com.

NORTHERN TRUST

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NORTHERN TRUST CORPORATION
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NORTHERNTRUST.COM

NORTHERN TRUST

A Letter from the Chairman

Dear Shareholders,

Annually, I discuss the company's performance for the past year and our expectations for the next. Needless to say, 2020 was not what we expected, nor was it a year like any other. The pandemic continues to impact everyone's daily life. While it has highlighted our resourcefulness and resiliency as a society, it has also accentuated inequalities and, at times, pushed us further apart. Living and operating in this environment has been disorientating and difficult for all of us.

For more than 130 years, we have seen our clients through times of relative prosperity and times of great upheaval. It is in times like these — times when our clients need us the most — that we are clearest about who we are, what we stand for and how we must evolve. And it is in times like these that we hold strongest to our unwavering principles of service, expertise and integrity. They guide how we take care of our employees, our clients and our communities. They focus us on the needs of today, while ensuring a brighter tomorrow. Our principles endure — they are our True North.

At Northern Trust, we have not been immune to the pandemic's effects. We have adapted nearly everything we do to operate the company effectively and create value for our stakeholders. We have consistently aimed to serve as our clients' most trusted financial partner, guarding and growing their assets as though they were our own. Every day, we work to earn this trust.

Throughout the pandemic, with the vast majority of our employees working remotely, Northern Trust's three businesses — wealth management, asset management and asset servicing — have remained dedicated to the clients who depend upon us. We have transformed in-person engagement into vibrant, interactive digital experiences. We have utilized our balance sheet to meet client needs for credit and liquidity.

We also introduced The Northern Trust Institute, which innovatively leverages our deep expertise and research to help wealth management clients achieve optimal outcomes. Through Integrated Trading Solutions, our asset servicing business gave clients access to global markets, multiple trading locations, high-quality liquidity and an integrated front-, middle- and back-office service. And our asset management business developed a new proprietary environmental, social and governance scoring methodology that enables investors to integrate sustainability into their investment portfolios.

Seeing the dramatic needs in our communities, we contributed $3 million to support the COVID-19 response efforts of nonprofit organizations around the world to provide healthcare, food and other humanitarian relief. And we launched the Northern Trust Foundation with a $20 million commitment. The Foundation aims to create more equitable opportunities for long-term financial success for those who too often face unfair hurdles because of their race, ethnicity, gender, geography or socio-economic conditions.

Despite the record low interest rates and fluctuating markets of 2020, we continued to grow our business and deliver solid financial performance. Assets under custody or administration ended the year at $14.5 trillion, up 21 percent from 2019, and assets under management were $1.4 trillion at the end of the year, up 14 percent. Revenue was consistent, as the increase in trust fees and other noninterest income was mostly offset by a reduction in net interest income.

Return on average common equity declined to 11.2 percent and diluted earnings per share declined 18 percent, reflecting lower interest rates, increased operating expenses and a higher provision for credit losses. Our capital levels remained strong and we maintained our quarterly dividend at 70 cents per share throughout the year.

As we look to 2021 and beyond, we remain focused on our key priorities:

- Syncing high-touch service with digital, data-driven delivery tailored to our clients' needs.
- Generating organic growth by delivering innovative solutions to new and existing clients.
- Leveraging our diverse workforce by equipping employees with skills for the future.
- Driving continual productivity through a sustainable, scalable operating model.
- Building upon our foundational strength with a strong, conservative balance sheet and a globally respected brand.

I will close by extending my heartfelt gratitude to our clients and shareholders for your patience and understanding through these volatile and uncertain times. I am also deeply grateful for the dedication, perseverance and courage of our employees through this past year's demanding moments. They make it possible for us to continue offering our clients the service, expertise and integrity that define us as a company.

I hope you'll enjoy reviewing our 2020 performance in a more interactive way through this site: **northerntrust.com/annual-report**. No matter what the future brings, we look forward to remaining your True North as we continue to create value for all of our stakeholders in the years ahead.
I wish you and your families a safe and rewarding 2021.

Thank you.

Sincerely,

Michael O'Grady
Chairman, President and Chief Executive Officer

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the
Securities Exchange Act of 1934
(Amendment No.)

Filed by the Registrant ☒ Filed by a party other than the Registrant ☐

Check the appropriate box:

☐ Preliminary Proxy Statement

☐ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**

☒ Definitive Proxy Statement

☐ Definitive Additional Materials

☐ Soliciting Material Under Section 240.14a-12

NORTHERN TRUST CORPORATION
(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

☒ No fee required

☐ Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

☐ Fee paid previously with preliminary materials.

☐ Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

NORTHERN
TRUST

Northern Trust Corporation
50 South La Salle Street
Chicago, Illinois 60603
March 9, 2021

Dear Stockholder:

You are cordially invited to attend the Northern Trust Corporation 2021 Annual Meeting of Stockholders to be held in a virtual meeting format, via the Internet, on Tuesday, April 20, 2021, at 10:30 a.m., Central Time.

For more than 130 years, our stockholders' support has been essential to Northern Trust's stability and success. **Your vote plays a vital role and is very important for our future**. Whether or not you plan to attend the Annual Meeting virtually, I urge you to vote your shares as promptly as possible.

The attached Notice of Annual Meeting of Stockholders and Proxy Statement provide you with information about each proposal to be considered at the Annual Meeting, as well as other information you may find useful in voting your shares. If you plan to attend the Annual Meeting virtually, please review the information on attendance procedures in the accompanying Proxy Statement.

If you choose not to attend, you may vote your shares by Internet or telephone in advance of the meeting. If you received a paper copy of the proxy materials, you also may complete, sign, date, and return your proxy card in the enclosed envelope. Instructions for voting by Internet or telephone can be found on your proxy card or your Notice Regarding the Availability of Proxy Materials.

Thank you for your continued support of Northern Trust Corporation, and your contribution to the future of our company.

Sincerely,

Michael G. O'Grady
Chairman of the Board, President and Chief Executive Officer

NORTHERN TRUST

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

Date: Tuesday, April 20, 2021

Time: 10:30 a.m., Central Time

Access: Our Annual Meeting can be accessed virtually at www.virtualshareholdermeeting.com/NTRS2021. To support the health and well-being of our various stakeholders in light of the ongoing COVID-19 pandemic, there will be no physical, in-person meeting.

Purposes: The purposes of the Annual Meeting are to:

- elect thirteen directors to serve on the Board of Directors until the 2022 Annual Meeting of Stockholders or until their successors are elected and qualified;
- approve, by an advisory vote, 2020 named executive officer compensation;
- ratify the appointment of KPMG LLP as Northern Trust Corporation's independent registered public accounting firm for the 2021 fiscal year; and
- transact any other business that may properly come before the Annual Meeting.

Record Date: You can, and should, vote if you were a stockholder of record at the close of business on February 22, 2021.

March 9, 2021

By order of the Board of Directors,

Susan C. Levy
Executive Vice President, General Counsel and Corporate Secretary

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON APRIL 20, 2021

This Proxy Statement, other proxy materials, our Annual Report on Form 10-K for the year ended December 31, 2020 and a link to the means to vote by Internet or telephone are available at http://materials.proxyvote.com/665859.

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PROXY SUMMARY

This summary highlights certain information contained in this Proxy Statement. The accompanying proxy is solicited on behalf of the Board of Directors (the "Board") of Northern Trust Corporation (the "Corporation") for use at the Corporation's Annual Meeting of Stockholders to be held on Tuesday, April 20, 2021 (the "Annual Meeting"). You should read the entire Proxy Statement carefully before voting. On or about March 9, 2021, we began mailing or otherwise making available our proxy materials, including a copy of our Annual Report on Form 10-K for the year ended December 31, 2020, to all stockholders entitled to vote at the Annual Meeting.

For more information on voting and attending the Annual Meeting, see "General Information about the Annual Meeting" on page 71 of this Proxy Statement.

VOTING MATTERS	Board Recommendation	Page
Item 1 – Election of Directors	**FOR**	9
Item 2 – Advisory Vote on Executive Compensation	**FOR**	28
Item 3 – Ratification of the Independent Registered Public Accounting Firm	**FOR**	67

COVID-19 RESPONSE

The COVID-19 pandemic presented health and economic challenges on an unprecedented scale in 2020. During this time, Northern Trust focused on the health and well-being of its workforce, meeting its clients' needs and supporting its communities.

Workforce

In 2020, Northern Trust implemented its global business resiliency plan, with the vast majority of staff working remotely throughout the year. To ensure the health and well-being of those members of our workforce for whom it was essential to work from one of our locations, as well as our clients and other visitors, several social distancing elements and other protective measures were implemented, such as temperature screenings, where allowable by law, distribution of personal protective equipment, and workforce health self-certifications. Although planning is underway to return to the office on a location-by-location basis when conditions permit, the vast majority of staff is expected to continue to work remotely for some time to come.

Client Service

During the second quarter of 2020, Northern Trust became a lender under the Paycheck Protection Program ("PPP"), administered by the U.S. Small Business Administration ("SBA") and intended to aid small businesses during the COVID-19 pandemic. Throughout 2020, Northern Trust originated more than 1,100 loans, with an aggregate original principal amount exceeding $220.0 million, under the PPP. In addition to lending under the PPP, Northern Trust elected to apply certain forms of relief to borrowers in response to the COVID-19 pandemic, including loan modifications and payment deferrals.

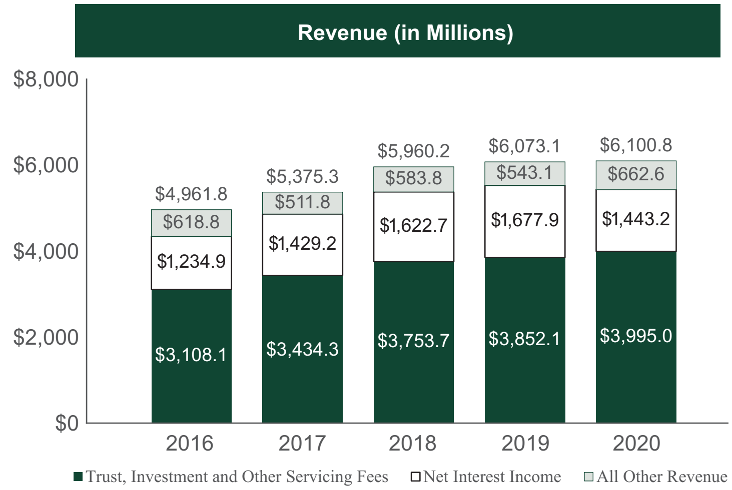
Community Support

In 2020, Northern Trust provided $2.5 million in COVID-19 relief support to numerous organizations serving those most affected by the pandemic. Northern Trust also provided $110.5 million in low-cost funding to assist Community Development Financial Institutions (CDFIs), which are instrumental in providing loans to small businesses and non-profit organizations under the PPP, throughout the year. The funding helps meet urgent demand among small businesses and non-profit groups by providing flexible terms and low rates. CDFIs provide loans, investments, financial services and technical assistance to underserved populations and communities. This funding was separate and distinct from the more than $220.0 million of loans made under the PPP.

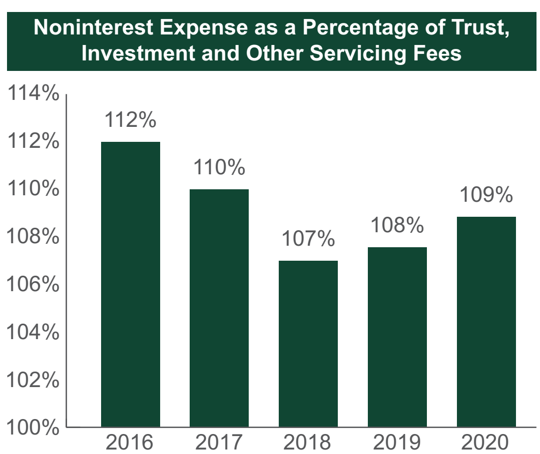
2020 FINANCIAL PERFORMANCE HIGHLIGHTS

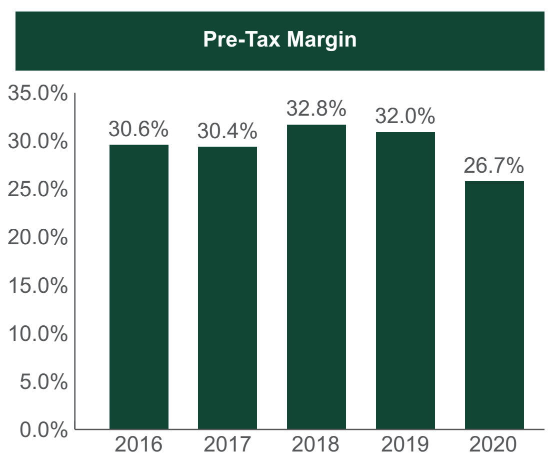
While our financial performance during 2020 was impacted by low interest rates and unprecedented challenges related to the COVID-19 pandemic, the three pillars of our financial strategy remained unchanged:

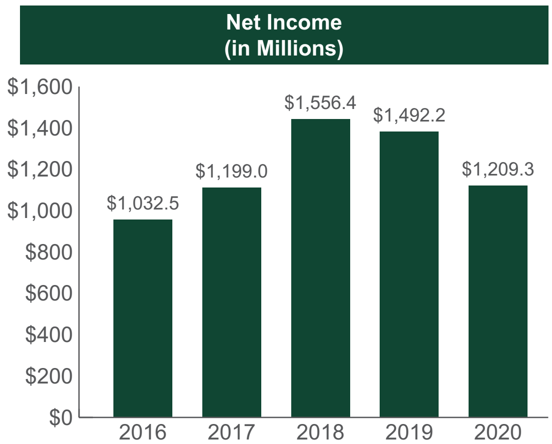
- **Achieving Growth** across the business, as demonstrated by continued growth in revenue and trust, investment and other servicing fees despite a substantial decline in net interest income and increased money market mutual fund fee waivers, each related to the current low-interest-rate environment.

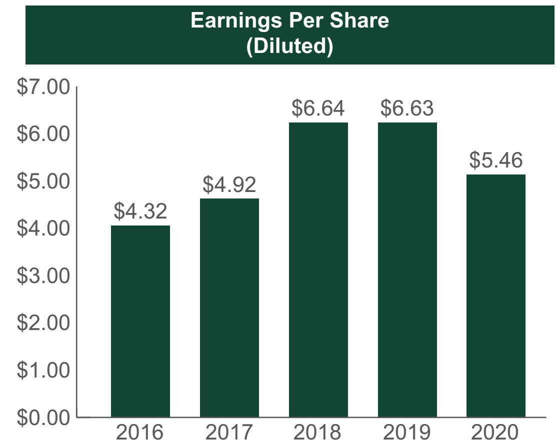


- **Driving Productivity and Profitability,** as demonstrated by our noninterest expense as a percentage of our trust, investment and other servicing fees remaining below the mid-point of levels reported in the most recent five years. Nevertheless, an increased provision for credit losses driven by current and projected economic conditions and downgrades in our loan portfolio resulting from the ongoing pandemic, as well as a substantial decline in net interest income and increased money market mutual fund fee waivers related to the low-interest-rate environment experienced in 2020, drove decreases in pre-tax margin, net income and earnings per share levels relative to recent years. We remain focused on continuing to improve our productivity and profitability, including through expense management initiatives and ongoing efforts to further embed a culture of sustainable expense management across the organization.

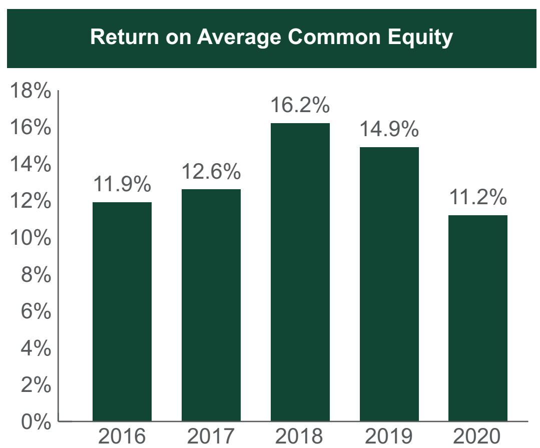


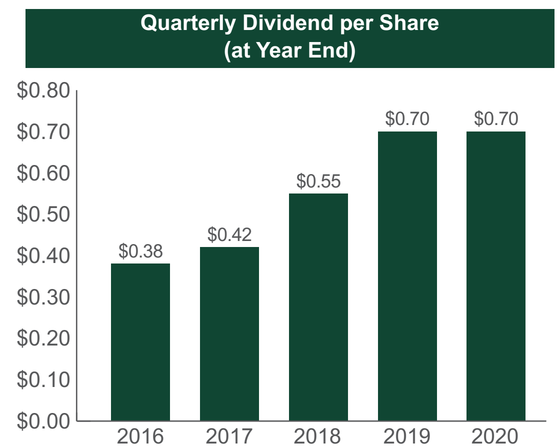






- **Generating Strong and Sustainable Stockholder Returns,** as demonstrated by our return on average common equity ("ROE") remaining within our target range of 10 – 15%, and the consistency of our quarterly dividends to the holders of our common stock.





We achieved these financial results while continuing to support our clients' liquidity needs and maintaining strong capital ratios, with all ratios exceeding those required for classification as "well capitalized" under federal bank regulatory capital requirements.

2020 CORPORATE STRATEGIC ACHIEVEMENTS

Execution on our strategies also was demonstrated through various strategic achievements, including:

- The continued success of our Wealth Management business's holistic approach to addressing unique client needs, and its differentiated service capabilities, including The Northern Trust Institute, which harnesses experience developed from advising generations of wealthy families to provide data-driven insights and guide our clients in achieving optimal wealth outcomes for their personal circumstances.

- Our Asset Management business's continued expansion of product and service offerings in the areas of greatest demand, including the launch of a new proprietary environmental, social and governance ("ESG") scoring methodology that enables the integration of sustainability into investment portfolios in a more transparent and focused manner.

- Continued expansion of the Corporate & Institutional Services ("C&IS") business's product and service capabilities, including advanced currency management and outsourced front-office trading solutions.

- Our continued commitment to the communities in which we operate, with the launch of a new, highly focused philanthropic strategy that concentrates our volunteerism and contributions on four key areas of fundamental impact—educational excellence, food security, accessible healthcare and affordable housing—and our pledge of $20 million over the next five years with the goal of reducing the economic opportunity gap to facilitate the long-term financial success of those who face unfair hurdles because of their race, ethnicity, gender, geography or socio-economic conditions.

- The successful completion of our "Value for Spend" expense management initiative, announced in October 2017 with the goal of realizing $250 million of expense run-rate savings by 2020, and ongoing efforts to further embed a culture of sustainable expense management across the organization.

2020 COMPENSATION OUTCOMES

Based upon its review of our corporate performance and the individual performance of each named executive officer, discussed in the Compensation Discussion and Analysis beginning on page 29 of this Proxy Statement, the Compensation and Benefits Committee approved the compensation amounts outlined in the table below. This table provides a comprehensive summary of each named executive officer's total direct compensation for the 2020 and 2019 performance years. This perspective may be useful in reviewing key incentive compensation decisions, as this is how the Committee considers performance and pay, with incentive compensation generally reflective of prior year's performance. It should be noted that the table below is not intended to be a substitute for the Summary Compensation Table on page 50, as certain amounts in the table below are different than the amounts in the Summary Compensation Table. The most significant difference is that this table reflects long-term incentive awards granted in February 2021 and February 2020 for the 2020 and 2019 performance years, respectively, while the Summary Compensation Table provides the value of the equity awards for the year in which they were granted.

Executive	Year	Salary (1)	Short-Term Annual Cash Incentive	Long-Term Incentives: Performance Stock Units	Long-Term Incentives: Restricted Stock Units	*Total Incentive Compensation (2)*	Total
Michael G. O'Grady *Chairman, President and Chief Executive Officer*	2020	$950,000	$1,175,000	$4,436,250	$2,388,750	*$8,000,000*	$8,950,000
	2019	950,000	2,075,000	4,436,250	2,388,750	*8,900,000*	9,850,000
Jason J. Tyler(3) *Chief Financial Officer*	2020	500,000	650,000	1,137,500	612,500	*2,400,000*	2,900,000
	2019	—	—	—	—	—	—
Peter B. Cherecwich *President—Corporate & Institutional Services*	2020	625,000	900,000	1,592,500	857,500	*3,350,000*	3,975,000
	2019	625,000	1,050,000	1,592,500	857,500	*3,500,000*	4,125,000
Steven L. Fradkin *President—Wealth Management*	2020	625,000	950,000	1,690,000	910,000	*3,550,000*	4,175,000
	2019	625,000	1,110,000	1,683,500	906,500	*3,700,000*	4,325,000
Shundrawn A. Thomas(3) *President—Asset Management*	2020	625,000	900,000	1,592,500	857,500	*3,350,000*	3,975,000
	2019	—	—	—	—	—	—

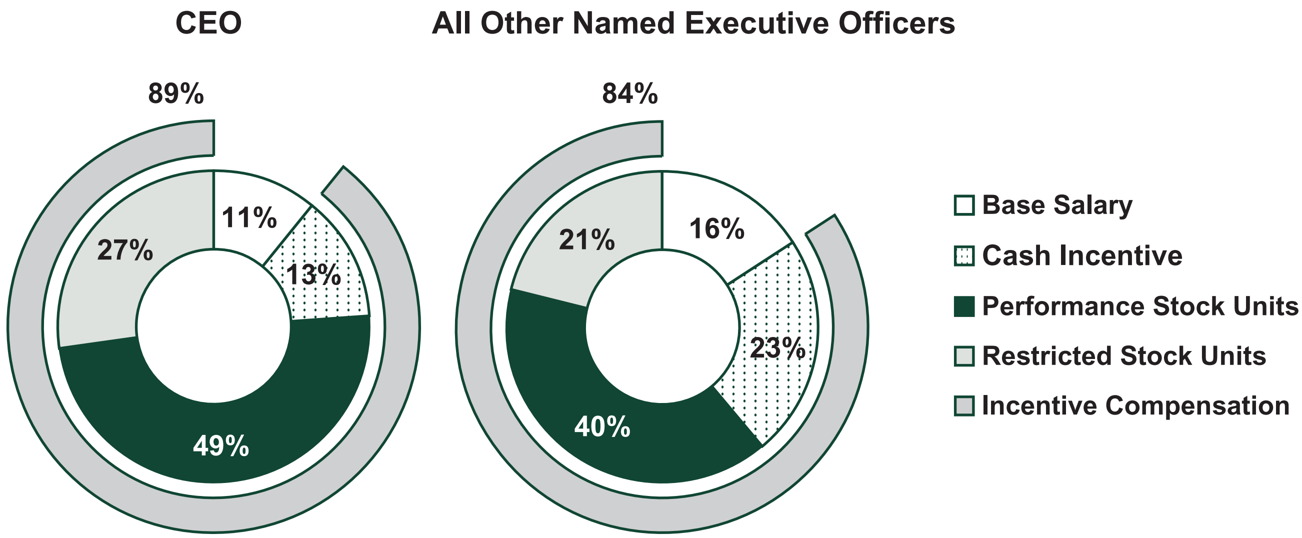
(1) Represents the applicable named executive officer's salary, as of February 2020 and 2019, respectively.

(2) Represents the total cash and equity incentive awards received by the applicable named executive officer in February 2021 for the 2020 performance year and February 2020 for the 2019 performance year, respectively.

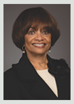
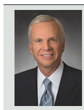
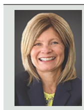
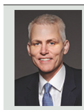
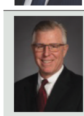
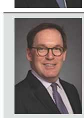
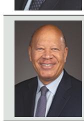
(3) Messrs. Thomas and Tyler were not named executive officers in 2019, therefore, their 2019 total direct compensation is not provided.

2020 OVERALL PAY MIX

Consistent with our pay for performance philosophy, the pay mix for our CEO and each of our other named executive officers heavily emphasizes incentive compensation. Our long-term incentive mix further emphasizes performance-based pay, with 65% of the long-term incentives being awarded in performance stock units earned based on performance over a three-year period, and 35% being awarded in restricted stock units.

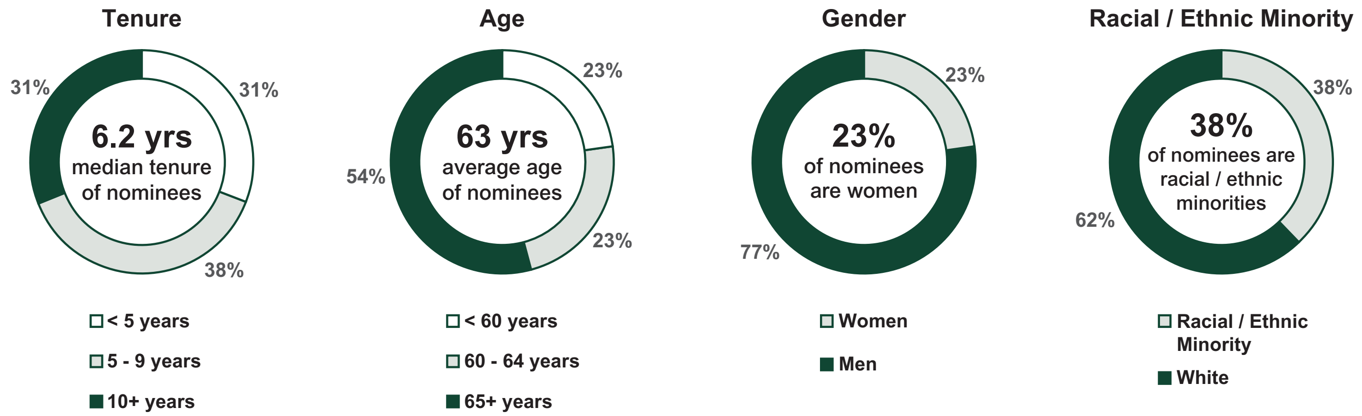


BOARD OF DIRECTORS

	Director	Age	Committees of the Board: Audit	Business Risk	Capital Governance	Compensation and Benefits	Corporate Governance	Executive	Other Public Company or Investment Company Boards
	**Linda Walker Bynoe** *Independent* Director Since 2006	68				✓	C	✓	2
	**Susan Crown** *Independent* Director Since 1997	62		✓			✓		1
	**Dean M. Harrison** *Independent* Director Since 2015	66	✓	C*				✓	0
	**Jay L. Henderson** *Lead Director /Independent* Director Since 2016	65	✓		✓	✓	✓	✓	2
	**Marcy S. Klevorn** *Independent* Director Since 2019	61	✓	✓*					1
	**Siddharth N. "Bobby" Mehta** *Independent* Director Since 2019	62		✓*	✓				3
	**Michael G. O'Grady** *Chairman, President and Chief Executive Officer* Director Since 2017	55						C	0
	**Jose Luis Prado** *Independent* Director Since 2012	66				✓	✓		1
	**Thomas E. Richards** *Independent* Director Since 2015	66		✓		C		✓	1
	**Martin P. Slark** *Independent* Director Since 2011	66							1
	**David H. B. Smith, Jr.** *Independent* Director Since 2010	54	C		✓			✓	1
	**Donald Thompson** *Independent* Director Since 2015	57	✓		C			✓	2
	**Charles A. Tribbett III** *Independent* Director Since 2005	65				✓	✓		0

C - Chair ✓ - Member * - Cybersecurity Risk Oversight Subcommittee member

Board Tenure, Age and Diversity Statistics



GOVERNANCE HIGHLIGHTS

What We Do	What We Don't Do
✓ Majority Independent Directors	✗ Plurality Voting in Uncontested Director Elections
✓ Engaged Lead Director	✗ Staggered Board
✓ Proxy Access Rights	✗ Poison Pill
✓ Stockholder Right to Call Special Meetings	✗ Supermajority Voting Requirements
✓ Frequent Executive Sessions for Independent Directors	✗ Overboarding of Directors
✓ Annual Strategic Planning Meeting with Board and Executive Officers	
✓ Regular Rotations of Committee Chairs	
✓ Regular Reviews of Governance Documents	
✓ Annual Board and Committee Self-Evaluations	

EXECUTIVE COMPENSATION HIGHLIGHTS

What We Do	What We Don't Do
✓ Closely align pay and performance, with the Compensation and Benefits Committee validating this alignment annually	✗ Excise tax gross-ups for executive change in control arrangements
✓ Ensure performance-based compensation comprises the most significant portion of incentive compensation, with 65% of long-term incentives being awarded in performance stock units based on performance over a three-year period	✗ Single-trigger change in control benefits
✓ Subject short- and long-term incentive awards to potential forfeiture or clawback in the event of misconduct resulting in a restatement of our financial statements and certain other types of misconduct	✗ Short selling, margining, hedging, pledging or hypothecating company shares permitted under our Securities Transactions Policy and Procedures
✓ Ensure our executives meet robust stock ownership guidelines, including holding requirements for any executive below the stock ownership guidelines	✗ Compensation plans that encourage excessive risk-taking
✓ Use an independent compensation consultant to advise the Compensation and Benefits Committee	✗ Excessive perquisites
✓ Ensure overlapping membership between the Compensation and Benefits Committee and our Audit and Business Risk Committees	✗ Repricing of underwater options
	✗ Dividend equivalents distributed on unvested performance or restricted stock unit awards

IMPORTANT DATES FOR 2022 ANNUAL MEETING

Stockholder Submission		Window for Submission
Proposals for inclusion in the proxy statement	→	On or before November 9, 2021
Other proposals (not included in the proxy statement)	→	Between November 21, 2021 and December 21, 2021
Director nomination under proxy access provisions	→	Between October 10, 2021 and November 9, 2021

ITEM 1—ELECTION OF DIRECTORS

Stockholders will be asked to elect thirteen directors at the Annual Meeting. Each of the thirteen nominees is currently serving as a director of the Corporation and its principal subsidiary, The Northern Trust Company (the "Bank").

Each of the thirteen director nominees has consented to serve as a director if elected at the Annual Meeting. Each nominee elected as a director will serve until the next Annual Meeting of Stockholders or until his or her successor is elected and qualified. If any nominee is unable to serve as a director at the time of the Annual Meeting, your proxy may be voted for the election of another nominee proposed by the Board or the Board may reduce the number of directors to be elected at the Annual Meeting.

As discussed further under "Corporate Governance—Director Nominations and Qualifications and Proxy Access," in evaluating director nominees, the Corporate Governance Committee considers a variety of factors, including relevant business and industry experience, professional background, age, current employment, community service and other board service. The Committee also considers the racial, ethnic, gender identity and other forms of diversity represented on the Board in assessing nominees. Accordingly, the thirteen director nominees possess a wide variety of experience, qualifications and skills, which equip the Board with the collective expertise to perform its oversight function effectively. Each of the candidates also has a reputation for, and long record of, integrity and good business judgment; has experience in leadership positions with a high degree of responsibility; is free from conflicts of interest that could interfere with his or her duties to the Corporation and its stockholders; and is willing and able to make the necessary commitment of time and attention required for effective Board service.

Further information with respect to the nominees for election to the Board at the Annual Meeting, including a summary of certain key skills, experience, and demographic background information, is set forth on the following pages.

The Board unanimously recommends that you vote FOR the election of each nominee.

INFORMATION ABOUT THE NOMINEES FOR DIRECTOR

Biographical Information

The following information about the nominees for election to the Board at the Annual Meeting is as of the date of this Proxy Statement, unless otherwise indicated.

LINDA WALKER BYNOE

Independent Director

Director Since: 2006
Age: 68

Board Committees
- Compensation and Benefits
- Corporate Governance (Chair)
- Executive

Professional Experience
- Telemat Limited LLC (project management and consulting firm)
  - President and Chief Executive Officer, since 1995

Current Public and/or Investment Company Directorships
- Equity Residential, since 2009
- Prudential Retail Mutual Funds, since 2005

Other Recent Public and/or Investment Company Directorships
- Anixter International Inc., 2006 to June 2020

Qualifications

The Board concluded that Ms. Bynoe should serve as a director based on her diverse consulting and investment experience, her expertise in public accounting, corporate governance, managing a private equity investment portfolio and strategy development and her experience as a director of other complex global corporations.

SUSAN CROWN

Independent Director

Director Since: 1997
Age: 62

Board Committees
- Business Risk
- Corporate Governance

Professional Experience
- Owl Creek Partners, LLC (private equity firm)
  - Chairman and Chief Executive Officer, since 2010
- Susan Crown Exchange Inc. (social investment organization)
  - Chairman and Founder, since 2009
- Henry Crown and Company (company with diversified investments)
  - Vice President, 1984 to 2015

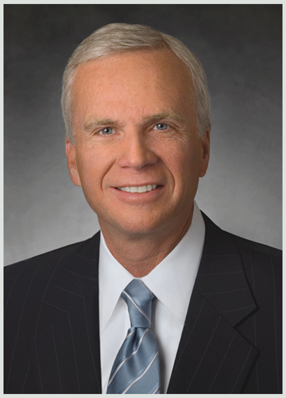
Current Public and/or Investment Company Directorships
- Illinois Tool Works Inc., since 1994

Qualifications

The Board concluded that Ms. Crown should serve as a director based on her leadership, risk oversight, governance, and corporate responsibility experience developed through service at various large organizations, both commercial and nonprofit, including as Chair of the Board of Trustees at Rush University Medical Center and the Rush System.

DEAN M. HARRISON

Independent Director



Director Since: 2015
Age: 66

Board Committees

- Audit
- Business Risk (Chair)*
- Executive

* Also a member of the Cybersecurity Risk Oversight Subcommittee

Professional Experience

- Northwestern Memorial HealthCare (the primary teaching affiliate of Northwestern University Feinberg School of Medicine and parent corporation of Northwestern Memorial Hospital)
  - President and Chief Executive Officer, since 2006

Qualifications

The Board concluded that Mr. Harrison should serve as a director based on his extensive experience leading a large, complex organization in a highly regulated industry.

JAY L. HENDERSON

Lead Director / Independent Director

Director Since: 2016
Age: 65

Board Committees

- Audit
- Capital Governance
- Compensation and Benefits
- Corporate Governance
- Executive

Professional Experience

- PricewaterhouseCoopers LLP (professional services firm)
  - Vice Chairman, Client Service for PricewaterhouseCoopers LLP, 2007 to 2016
  - Managing Partner of the Greater Chicago Market, 2003 to 2013

Current Public and/or Investment Company Directorships

  - Illinois Tool Works Inc., since 2016
  - The J. M. Smucker Company, since 2016

Qualifications

The Board concluded that Mr. Henderson should serve as a director based on his extensive experience working with, and serving as a director of, various complex global organizations across multiple markets and industry sectors, as well as his leadership experience in various roles at PricewaterhouseCoopers LLP.

MARCY S. KLEVORN

Independent Director

Director Since: 2019
Age: 61

Board Committees

- Audit
- Business Risk*

* Also the Chair of the Cybersecurity Risk Oversight Subcommittee

Professional Experience

- Ford Motor Company (global automaker)
  - Chief Transformation Officer, May 2019 to October 2019
  - Executive Vice President and President, Mobility, 2017 to May 2019
  - Chief Information Officer and Group Vice President, Information Technology, 2015 to 2017
  - Director, Office of the Chief Information Officer, 2013 to 2015

Current Public and/or Investment Company Directorships

- Humana, Inc., since February 2021

Other Recent Public and/or Investment Company Directorships

- Pivotal Software, Inc., 2016 to 2019

Qualifications

The Board concluded that Ms. Klevorn should serve as a director based on her extensive experience with respect to the innovation and application of cutting-edge technologies.

SIDDHARTH N. "BOBBY" MEHTA

Independent Director

Director Since: 2019
Age: 62

Board Committees

- Business Risk*
- Capital Governance

* Also a member of the Cybersecurity Risk Oversight Subcommittee

Professional Experience

- TransUnion (global risk and information solutions provider)
  - President and Chief Executive Officer, 2007 to 2012
- HSBC Finance Corporation (owner and servicer of a portfolio of residential real estate loans) and HSBC North America Holdings, Inc. (holding company for HSBC Holdings plc's operations in the United States)
  - Chief Executive Officer, 2005 to 2007

Current Public and/or Investment Company Directorships

- The Allstate Corporation, since 2014
- Jones Lang LaSalle Incorporated, since 2019
- TransUnion, since 2007

Other Recent Public and/or Investment Company Directorships

- Piramal Enterprises Limited, 2013 to February 2020

Qualifications

The Board concluded that Mr. Mehta should serve as a director based on his management and board experience at large, complex organizations and his experience in the financial services industry.

MICHAEL G. O'GRADY

Chairman, President and Chief Executive Officer

Director Since: 2017
Age: 55

Board Committees
- Executive (Chair)

Professional Experience
- Northern Trust Corporation and The Northern Trust Company
  - Chairman of the Board, since January 2019
  - Chief Executive Officer, since 2018
  - President, since 2017
  - President, Corporate & Institutional Services, 2014 to 2016
  - Chief Financial Officer, 2011 to 2014
- Bank of America Merrill Lynch
  - Managing Director, Investment Banking Group, 2000 to 2011

Qualifications

The Board concluded that Mr. O'Grady should serve as a director based on his experience and ongoing responsibilities with respect to Northern Trust's businesses.

JOSE LUIS PRADO

Independent Director

Director Since: 2012
Age: 66

Board Committees
- Compensation and Benefits
- Corporate Governance

Professional Experience
- Tropicale Foods Group (frozen foods manufacturer)
  - Chairman of the Board, since March 2020
- Evans Food Group, Ltd. (global food company)
  - Vice Chairman, since 2019
  - Chairman and Chief Executive Officer, 2016 to 2019
- PepsiCo, Inc.
  - President, Quaker Oats North America, 2011 to 2014

Current Public and/or Investment Company Directorships
- Hormel Foods Corporation, since 2019

Other Recent Public and/or Investment Company Directorships
- Brinker International, Inc., 2015 to 2019

Qualifications

The Board concluded that Mr. Prado should serve as a director based on his management, marketing and risk oversight experience at a complex global corporation and his substantial international experience.

THOMAS E. RICHARDS

Independent Director

Director Since: 2015
Age: 66

Board Committees
- Business Risk
- Compensation and Benefits (Chair)
- Executive

Professional Experience
- CDW Corporation (provider of integrated information technology solutions in the United States, Canada and the United Kingdom)
  - Executive Chairman, 2013 to 2019
  - Chief Executive Officer, 2011 to 2018
  - President, 2009 to 2018

Current Public and/or Investment Company Directorships
- BCE, Inc., since May 2020

Other Recent Public and/or Investment Company Directorships
- CDW Corporation, 2011 to 2019

Qualifications

The Board concluded that Mr. Richards should serve as a director based on his experience leading a large, complex organization and his experience in the information technology industry.

MARTIN P. SLARK

Independent Director

Director Since: 2011
Age: 66

Professional Experience
- Molex LLC (manufacturer of electronic, electrical and fiber optic interconnection products and systems)
  - Chief Executive Officer, 2005 to 2018

Current Public and/or Investment Company Directorships
- Hub Group, Inc., since 1996

Qualifications

The Board concluded that Mr. Slark should serve as a director based on his experience leading a complex global corporation and his risk oversight experience as Chief Executive Officer of Molex LLC and as a director of other large, complex corporations, including Koch Industries, Inc. and Liberty Mutual Insurance Company.

DAVID H. B. SMITH, JR.

Independent Director

Director Since: 2010
Age: 54

Board Committees
- Audit (Chair)
- Capital Governance
- Executive

Professional Experience
- Mutual Fund Directors Forum (nonprofit membership organization for investment company directors)
  - Executive Vice President, Policy & Legal Affairs and General Counsel, since 2005
- U.S. Securities and Exchange Commission
  - Associate Director, Division of Investment Management, 2001 to 2005

Current Public and/or Investment Company Directorships
- Illinois Tool Works Inc., since 2009

Qualifications

The Board concluded that Mr. Smith should serve as a director based on his regulatory and leadership experience in the finance industry gained from his roles at the U.S. Securities and Exchange Commission and the Mutual Fund Directors Forum. The Board also considered that Mr. Smith's interest as a beneficiary of a trust that holds a significant amount of the Corporation's common stock further aligns his interests with the interests of the Corporation's stockholders.

DONALD THOMPSON

Independent Director

Director Since: 2015
Age: 57

Board Committees
- Audit
- Capital Governance (Chair)
- Executive

Professional Experience
- Cleveland Avenue, LLC (food and beverage accelerator and investment company)
  - Founder and Chief Executive Officer, since 2015
- McDonald's Corporation (global foodservice retailer)
  - President and Chief Executive Officer, 2012 to 2015

Current Public and/or Investment Company Directorships
- Royal Caribbean Cruises Ltd., since 2015
- Beyond Meat, Inc., since 2015 (public company since 2019)

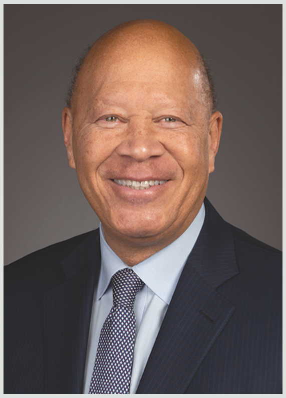
Other Recent Public and/or Investment Company Directorships
- McDonald's Corporation, 2011 to 2015

Qualifications

The Board concluded that Mr. Thompson should serve as a director based on his management and board experience at other complex global corporations.

CHARLES A. TRIBBETT III

Independent Director



Director Since: 2005
Age: 65

Board Committees
- Compensation and Benefits
- Corporate Governance

Professional Experience
- Russell Reynolds Associates (global executive recruiting firm)
  - Vice Chairman of Board and CEO Advisory Group, since January 2020
  - Managing Director, since 1989

Qualifications

The Board concluded that Mr. Tribbett should serve as a director based on his global leadership consulting experience evaluating and identifying senior management professionals and his leadership experience as Vice Chairman of Russell Reynolds Associates.

Director Skills and Experience Matrix

	Bynoe	Crown	Harrison	Henderson	Klevorn	Mehta	O'Grady	Prado	Richards	Slark	Smith	Thompson	Tribbett
Skills and Experience													
Finance / Accounting – knowledge of, or experience in, accounting, financial reporting, or auditing processes and standards	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Financial Services – senior leadership within, or oversight experience with respect to, the financial services industry, including asset management	✓	✓				✓	✓				✓		
Global / International – experience related to international business strategy and operations					✓	✓	✓	✓	✓	✓		✓	✓
Leadership – experience managing complex business operations and strategic planning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Public Company Board Experience – experience serving on the board of directors of another publicly traded entity	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	
Regulatory – experience with regulated businesses, regulatory requirements, and relationships with regulatory bodies or agencies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Risk Management – knowledge or expertise with respect to risk management processes across large, complex organizations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Talent Management and Development – experience in senior executive development, succession planning, and compensation matters		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Technology / Innovation / Cybersecurity – experience with, or oversight of, innovative technology, information / data management systems, fintech, privacy, and/or cybersecurity			✓		✓	✓			✓	✓		✓	
Demographic Background													
Board Tenure													
Completed Years	14	23	6	4	2	2	4	8	5	9	10	6	15
Gender													
Male			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Female	✓	✓			✓								
Age													
Years Old	68	62	66	65	61	62	55	66	66	66	54	57	65
Race / Ethnicity													
Asian						✓							
Black / African American	✓											✓	✓
Hispanic / Latino								✓					
White		✓	✓	✓	✓		✓		✓	✓	✓		

BOARD AND BOARD COMMITTEE INFORMATION

Our Board currently consists of thirteen members. The Board has determined that each of the following twelve current directors is independent in accordance with our independence standards, which conform with the U.S. Securities and Exchange Commission (the "SEC") rules and the listing standards of The NASDAQ Stock Market LLC ("NASDAQ"): Linda Walker Bynoe, Susan Crown, Dean M. Harrison, Jay L. Henderson, Marcy S. Klevorn, Siddharth N. "Bobby" Mehta, Jose Luis Prado, Thomas E. Richards, Martin P. Slark, David H. B. Smith, Jr., Donald Thompson and Charles A. Tribbett III.

During 2020, the Corporation's Board held nine meetings. All persons who were directors during 2020 attended at least 75% of the total meetings of the Board and the committees on which they served occurring during the period in which they served, except for Mr. Richards, who attended approximately 65% of such meetings due to an extended illness. Our Corporate Governance Guidelines state that all directors are expected to attend each Annual Meeting of Stockholders. In accordance with this expectation, all of the directors then serving attended the 2020 Annual Meeting of Stockholders held on April 21, 2020.

Board Committees

The standing committees of the Board are the Audit Committee, the Business Risk Committee, the Capital Governance Committee, the Compensation and Benefits Committee, the Corporate Governance Committee and the Executive Committee. On January 19, 2021, the Business Risk Committee established the Cybersecurity Risk Oversight Subcommittee to assist the Business Risk Committee in discharging its oversight duties with respect to cybersecurity risk. With the exception of the Executive Committee, all standing committees are composed solely of independent directors. Consequently, independent directors directly oversee critical matters and appropriately oversee the Chairman and CEO and other members of senior management. Each standing committee and subcommittee is governed by a written charter. These charters detail the duties and responsibilities of each committee and subcommittee and are available on the Corporation's website at www.northerntrust.com.

Additional information regarding the roles, responsibilities and composition of the Board's standing committees and subcommittees is set forth below.

AUDIT COMMITTEE

MEMBERS	KEY RESPONSIBILITIES / AREAS OF OVERSIGHT
David H. B. Smith, Jr. (Chair) Dean M. Harrison Jay L. Henderson Marcy S. Klevorn Donald Thompson	The Audit Committee assists the Board in its oversight of: ● the integrity of the organization's consolidated annual and quarterly financial statements and earnings releases; ● the organization's compliance with accounting, legal and regulatory requirements; ● the qualifications and independence of the Corporation's public accountants; and ● the performance of the organization's internal audit function and the Corporation's public accountants.

The Board has determined that all members of the Audit Committee are independent under SEC rules and NASDAQ listing standards. The Board also has determined that all Audit Committee members have the financial experience and knowledge required for service on the Committee, and that Messrs. Harrison, Henderson, Smith, and Thompson each satisfy the definition of "audit committee financial expert," under SEC rules.

The Audit Committee met seven times in 2020.

BUSINESS RISK COMMITTEE

MEMBERS	KEY RESPONSIBILITIES / AREAS OF OVERSIGHT
Dean M. Harrison (Chair) Susan Crown Marcy S. Klevorn Siddharth N. "Bobby" Mehta Thomas E. Richards	The Business Risk Committee assists the Board in its oversight of: ● the risk management policies of the Corporation's global operations; ● the operation of the Corporation's global risk management framework; and ● management's procedures for identifying, measuring, aggregating, and reporting on: ○ the Corporation's risk-based capital requirements; and ○ the risks inherent in the businesses of the Corporation and its subsidiaries in the following categories: credit risk, market and liquidity risk, fiduciary risk, operational risk, compliance risk and strategic risk.

The Board has determined that all members of the Business Risk Committee are independent under SEC rules and NASDAQ listing standards.

The Business Risk Committee met eight times in 2020.

As noted above, the Business Risk Committee has established a Cybersecurity Risk Oversight Subcommittee to assist the Business Risk Committee with oversight of cybersecurity risk. The subcommittee consists of the following directors: Marcy S. Klevorn (Chair), Dean M. Harrison, and Siddharth N. "Bobby" Mehta. The Cybersecurity Risk Oversight Subcommittee was established on January 19, 2021 and therefore did not meet in 2020.

CAPITAL GOVERNANCE COMMITTEE

MEMBERS	KEY RESPONSIBILITIES / AREAS OF OVERSIGHT
Donald Thompson (Chair) Jay L. Henderson Siddharth N. "Bobby" Mehta David H. B. Smith, Jr.	The Capital Governance Committee assists the Board in its oversight of the capital management and resolution planning activities of the Corporation, including: ● the capital adequacy assessments, forecasting, and stress-testing processes and activities of the Corporation and its subsidiaries, including with respect to the annual Comprehensive Capital Analysis and Review ("CCAR") exercise; ● the Corporation's annual capital plan, including proposed capital actions; ● the Corporation's and the Bank's regulatory capital ratios and capital levels; and ● the Corporation's resolution plans.

The Board has determined that all members of the Capital Governance Committee are independent under SEC rules and NASDAQ listing standards.

The Capital Governance Committee met twelve times in 2020.

COMPENSATION AND BENEFITS COMMITTEE

MEMBERS	KEY RESPONSIBILITIES / AREAS OF OVERSIGHT
Thomas E. Richards (Chair) Linda Walker Bynoe Jay L. Henderson Jose Luis Prado Charles A. Tribbett III	The Compensation and Benefits Committee assists the Board in its oversight of: ● the compensation of the directors and executive officers of the Corporation and its subsidiaries; ● the employee benefit and equity-based plans of the organization; and ● management development and succession planning, including with respect to the position of CEO.

The Board has determined that all members of the Compensation and Benefits Committee are independent under SEC rules and NASDAQ listing standards.

The Compensation and Benefits Committee met six times in 2020.

CORPORATE GOVERNANCE COMMITTEE

MEMBERS	KEY RESPONSIBILITIES / AREAS OF OVERSIGHT
Linda Walker Bynoe (Chair) Susan Crown Jay L. Henderson Jose Luis Prado Charles A. Tribbett III	The Corporate Governance Committee assists the Board with: ● the identification of candidates for nomination or appointment as directors; ● the oversight of the Board's committee structure; ● the oversight of the annual evaluation of the Board and its committees; ● the development of the Corporation's Corporate Governance Guidelines; ● the appointment of a successor in the event of the unanticipated death, disability or resignation of the Corporation's CEO; ● the procedures relating to stockholder communications with the Board; and ● the corporate citizenship and social responsibility matters of significance to the Corporation and its subsidiaries.

The Board has determined that all members of the Corporate Governance Committee are independent under SEC rules and NASDAQ listing standards.

The Corporate Governance Committee met four times in 2020.

EXECUTIVE COMMITTEE

MEMBERS	KEY RESPONSIBILITIES / AREAS OF OVERSIGHT
Michael G. O'Grady (Chair) Linda Walker Bynoe Dean M. Harrison Jay L. Henderson Thomas E. Richards David H. B. Smith, Jr. Donald Thompson	The Board appoints an Executive Committee so that there will be a committee of the Board empowered to act for the Board, to the full extent permitted by law, between meetings of the Board if necessary and appropriate. In the event of a triggering event, the Executive Committee is also responsible for directing the execution of appropriate resolution and recovery plans.

The Executive Committee did not meet in 2020.

CORPORATE GOVERNANCE

Key Governance Practices

We believe that the high standards set by our governance structure provide the foundation for the strength of our business. An overview of certain key governance practices reflective of our strong governance profile is set forth below.

What We Do	What We Don't Do
✓ Majority Independent Directors	✗ Plurality Voting in Uncontested Director Elections
✓ Engaged Lead Director	✗ Staggered Board
✓ Proxy Access Rights	✗ Poison Pill
✓ Stockholder Right to Call Special Meetings	✗ Supermajority Voting Requirements
✓ Frequent Executive Sessions for Independent Directors	✗ Overboarding of Directors
✓ Annual Strategic Planning Meeting with Board and Executive Officers	
✓ Regular Rotations of Committee Chairs	
✓ Regular Reviews of Governance Documents	
✓ Annual Board and Committee Self-Evaluations	

Director Independence

To be considered independent, the Board must affirmatively determine that a director has no relationship with the Corporation which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. The Corporation's Corporate Governance Guidelines require that a majority of the directors serving on the Board meet the criteria for "independence" under NASDAQ listing standards.

In making independence determinations, the Board considers, among all other relevant matters, the criteria for independence contained in the NASDAQ listing standards. Under these standards, the following persons shall not be considered "independent":

- a director who is or was an employee or executive officer of the Corporation, or whose Family Member (as defined below) is or was an executive officer of the Corporation, at any time during the past three years;
- a director who receives or has received, or whose Family Member receives or has received, compensation from the Corporation in excess of $120,000 during any period of twelve consecutive months within the past three years, other than director and committee fees, benefits under a tax-qualified retirement plan or other forms of nondiscretionary compensation; provided, however, that compensation received by a Family Member of a director for service as an employee (other than as an executive officer) of the Corporation need not be considered in determining independence;
- a director who is, or whose Family Member is, a current partner of the Corporation's outside auditor, or who was a partner or employee of the Corporation's outside auditor who worked on the Corporation's audit at any time during any of the past three years;
- a director of the Corporation who is, or has a Family Member who is, employed as an executive officer of another entity where at any time during the past three years any of the executive officers of the Corporation serve on the compensation committee of such other entity; or
- a director who is, or whose Family Member is, a partner in, a controlling stockholder of, or an executive officer of, any organization to which the Corporation made, or from which the Corporation received, payments for property or services in the current or any of the past three fiscal years that exceed the greater of $200,000 or 5% of the recipient's consolidated gross revenue for that year, other than payments arising solely from investments in the Corporation's securities or payments under nondiscretionary charitable contribution matching programs.

"Family Member" means a person's spouse, parents, children, siblings, mothers- and fathers-in-law, sons- and daughters-in-law, brothers- and sisters-in-law, and anyone (other than domestic employees) who shares the person's home.

The Board has determined that each director serving during 2020 was, and each current director is, independent of the Corporation in accordance with the Corporation's Corporate Governance Guidelines and categorical standards, except for Mr. O'Grady, who currently serves as the Corporation's Chairman, President and CEO.

In addition to the categorical standards, the Board considered that the Corporation or its subsidiaries provided financial services to each of its directors, or persons or entities affiliated with such directors, except for Mr. Tribbett, including trust and related services, brokerage services, investment management, asset servicing, asset management, credit services and other banking services. These transactions were undertaken in the ordinary course of business and were made on substantially the same terms (including interest rates and collateral for loan transactions) as those prevailing at the time for comparable transactions with other persons not related to the Corporation or any affiliated entities involved in the transactions. None of these transactions involved more than the normal risk of collectability or presented other unfavorable features, and any extensions of credit to directors and executive officers of the Corporation were permitted under the provisions of Section 13(k) of the Securities Exchange Act of 1934 (the "Exchange Act"). None of these transactions or any transactions in which the Corporation or any of its subsidiaries sold or purchased products and services to or from any of the Corporation's directors, or persons or entities affiliated with its directors, were material to the Corporation or any affiliated entities involved in the transactions. With respect to Mr. Henderson, the Board also considered the related party transaction reviewed and approved by the Audit Committee in accordance with the Corporation's Related Person Transactions Policy described below. In each case, the Board determined that these relationships did not affect any director's ability to exercise independent judgment in carrying out his or her responsibilities as a director.

Related Person Transactions Policy

The Board, through its Audit Committee, has adopted a written Related Person Transactions Policy to govern the review, approval, and ratification of any transaction, arrangement or relationship in which the Corporation or its subsidiaries are party, the amount involved exceeds $120,000, and in which any related persons have a direct or indirect material interest. "Related persons" means the Corporation's directors, nominees for director, executive officers, greater than five percent beneficial owners, members of their immediate family and any person (other than a tenant or employee) sharing their household.

Any related person proposing to enter into a potential related party transaction with the Corporation or its subsidiaries must notify the Corporate Secretary of the facts and circumstances of the proposed transaction. If the Corporate Secretary finds that the transaction would constitute a related party transaction, it must be reviewed and approved or ratified by the Audit Committee or the Audit Committee Chair. In considering related person transactions, the Audit Committee or the Audit Committee Chair will consider all relevant facts and circumstances and approve only those related person transactions that are in, or otherwise not inconsistent with, the best interests of the Corporation and its subsidiaries.

Kathleen Finley, Mr. Henderson's daughter, has been employed by the Bank since 2005, currently serving as a Senior Vice President on the Wealth Management National Services team of the Bank. In such role, Ms. Finley earned compensation in excess of $120,000 in 2020, and received retirement, health and wellness benefits, all on comparable terms as those provided for other employees of the Bank. Pursuant to the Related Person Transactions Policy, our Audit Committee considers and approves Ms. Finley's employment on an annual basis.

Executive Sessions

The independent directors of the Corporation met in executive sessions separate from management six times during 2020. The Lead Director or, in his absence, another independent director designated by the Lead Director, presides at executive sessions of the independent directors. The standing committees of the Board also regularly held executive sessions during 2020. These sessions were led by the respective independent committee Chairs.

Board Evaluations

The Board and each of its standing committees thoroughly evaluate their own effectiveness throughout the year. The evaluation is a multi-faceted process that includes discussions with our Lead Director, individual director input on Board and committee meeting agenda topics, executive sessions without management present, periodic input to our Chairman and CEO and other members of senior management on agenda topics and enhancements to Board and committee effectiveness, and an annual formal self-evaluation overseen by the Corporate Governance Committee. A summary of the self-evaluation process is as follows.

Determine Format

Each year, the Committee formally considers and approves the process through which Board and committee self-evaluations are to be conducted to ensure they remain efficient and effective means by which to assess, and foster the continual enhancement of, the Board and its committees.

Conduct Evaluation

In recent years, the self-evaluation process has been led by the Lead Director, who conducts in-depth, one-on-one discussions with each of our directors guided by a list of thematic questions, including with respect to:

- Board and committee performance
- Board and committee composition and diversity
- Management's relationship with the Board
- Corporate strategy
- Corporate and Board culture
- Board and committee priorities

Review Feedback

The Lead Director provides a summary of these discussions to the full Board for its consideration in executive session.

Each standing committee also meets in executive session to provide an opportunity to discuss the key takeaways from the evaluation process as they may apply to such committee's effectiveness.

Implement Feedback

In response to feedback from the evaluation process, the Board and committees work with management to improve policies and practices to enhance Board and committee effectiveness.

Ongoing Feedback Opportunities

In addition to the formal annual Board and committee self-evaluation process, all directors are encouraged to provide feedback at any time throughout the year to further the improvement of the Board's practices. Opportunities for such feedback are provided through one-on-one conversations with our Lead Director and regular executive sessions of the Board and each of its committees without management present, among other means.

As a result of this evaluation process, certain enhancements have been made in recent years to Board and committee practices and meeting materials to further their effectiveness. For example, the Board's 2020 self-evaluation process identified the Board's desire for additional discussion regarding certain information technology and digital strategy topics, as well as certain enhancements to Board and committee practices and meeting materials, all of which were implemented throughout 2020.

Board Leadership Structure

The current leadership structure of the Board consists of a combined Chairman and CEO position and a separate Lead Director who is appointed annually by the Corporation's independent directors in accordance with the Corporation's Corporate Governance Guidelines. The Board has determined that combining the positions of Chairman and CEO is the most appropriate for the Corporation at this time, as having one person serve as Chairman and CEO provides unified leadership and direction to the Corporation and strengthens the ability of the CEO to develop and implement strategic initiatives and respond effectively in crisis situations.

The Lead Director's role with respect to the Corporation is a significant one, with primary responsibilities including the following:

- approving Board meeting schedules and agendas to ensure that there is sufficient time for discussion of all Board agenda items and overseeing the information provided to the Board;

- calling at any time deemed necessary or advisable by the Lead Director a special meeting of the Board or a special executive session of the independent directors;
- adding items to the agenda of any regular or special meeting of the Board deemed necessary or advisable by the Lead Director;
- presiding at all meetings of the Board at which the Chairman is not present;
- presiding at all regular and any special executive sessions of the independent directors;
- serving as a liaison between the independent directors and the Chairman and CEO;
- conducting, by means of an interview with each director, including the Chairman and CEO, the Board's annual self-evaluation of its performance and then providing a summary report to the Board; and
- being available for consultation and direct communication with major stockholders.

Taking into account the prominence of the Lead Director role at the Corporation, the Board has determined that the Corporation's current Board leadership structure provides significant independent leadership of the Board and is most appropriate for the Corporation at this time. The Corporation has a strong independent Board, with all current directors except for Mr. O'Grady having been determined to be independent under NASDAQ listing standards and all standing committees of the Board except for the Executive Committee being composed solely of independent directors. The significant and meaningful responsibilities of the Corporation's independent directors, together with those of the Lead Director, also foster good governance practices and provide for substantial independent oversight of critical matters related to the Corporation.

Risk Oversight

General

The Board provides oversight of risk management directly as well as through its Audit, Business Risk, Capital Governance and Compensation and Benefits Committees. The Board approves the Corporation's risk management framework and Corporate Risk Appetite Statement, which reflects the expectation that risk be consciously considered as part of the Corporation's strategic decisions and in its day-to-day activities. The Corporation actively monitors employees using programs, policies, and other tools that are designed to ensure that they work within established risk frameworks and limits. The Business Risk Committee assumes primary responsibility and oversight with respect to credit risk, market and liquidity risk, fiduciary risk, operational risk, compliance risk and strategic risk. The Audit Committee provides oversight with respect to financial reporting and legal risk, while the Compensation and Benefits Committee oversees the development and operation of the incentive compensation program of the Corporation and its subsidiaries. The Compensation and Benefits Committee annually reviews management's assessment of the effectiveness of the design and performance of the incentive compensation arrangements and practices in providing incentives that are consistent with the safety and soundness of the Corporation and its subsidiaries. This assessment includes an evaluation of whether these incentive compensation arrangements and practices discourage inappropriate risk-taking behavior by participants. Pursuant to its charter, the Compensation and Benefits Committee is required to have at least one member who is a member of the Business Risk Committee and at least one member who is a member of the Audit Committee. Among other responsibilities, the Capital Governance Committee oversees the processes and activities of the Corporation and its subsidiaries related to resolution planning and capital adequacy assessments, forecasting and stress testing, including the annual CCAR exercise, and challenges management, as appropriate, on various elements of such processes and activities. Accordingly, the Capital Governance Committee provides oversight with respect to the linkage of the Corporation's material risks to the capital adequacy assessment and resolution planning processes. The charters for the Audit, Business Risk, Capital Governance and Compensation and Benefits Committees provide that the Committees may meet with the individuals who supervise day-to-day risk management responsibilities of the Corporation and other members of management, consultants or advisors, as each committee deems appropriate.

Information Security and Technology Risk Oversight

As a financial services company entrusted with the safeguarding of sensitive information, the Board believes that a strong information security and technology risk management program is crucial to the Corporation's success in an environment of increasing cyber threats. Accordingly, the Board and the Business Risk Committee play meaningful roles with respect to the oversight of information security and technology risk management at the Corporation. Specifically, in conjunction with its oversight of overall operational risk, the Business Risk Committee oversees management's actions to identify, assess, mitigate and remediate material issues related to information security and technology risk; annually reviews and approves the Corporation's information security and technology risk management policy and program; and receives regular updates from management, including the Chief Information Risk Officer, on the Corporation's information security and technology risk management program and cyber risk profile. On January 19, 2021, the Business Risk Committee established the Cybersecurity Risk Oversight Subcommittee to provide for an even deeper focus on, and governance framework around, cybersecurity risks inherent in the Corporation's business. The Board also plays a role with respect to the oversight of such risks, meeting periodically with management and third-party experts to discuss its role in crisis management and to review tabletop exercises designed to evaluate the Corporation's cybersecurity program.

For a further description of the risk management policies and practices of the Corporation's management, including those related to information security and technology risk, see the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Management" in the Corporation's Annual Report on Form 10-K for the year ended December 31, 2020.

Corporate Governance Guidelines

The Corporation has had Corporate Governance Guidelines in place since 2000. The Corporate Governance Committee reviews and reassesses the adequacy of the Corporate Governance Guidelines at least annually and recommends any changes to the Board for approval. The Corporation's Corporate Governance Guidelines embody many of the Corporation's long-standing practices and incorporate policies and procedures that strengthen its commitment to corporate governance best practices. A copy of the Corporate Governance Guidelines is available on the Corporation's website at www.northerntrust.com.

Code of Business Conduct and Ethics

The Board of the Corporation has adopted a Code of Business Conduct and Ethics to:

- promote honest and ethical conduct, including fair dealing and the ethical handling of actual or apparent conflicts of interest;
- promote full, fair, accurate, timely and understandable public disclosure about the Corporation;
- promote compliance with applicable laws and governmental rules, codes and regulations wherever the Corporation does business;
- ensure the protection of the Corporation's legitimate business interests; and
- deter wrongdoing.

The Code of Business Conduct and Ethics satisfies applicable SEC and NASDAQ requirements and applies to all directors, officers (including the Corporation's principal executive officer, principal financial officer and principal accounting officer) and employees of the Corporation and its subsidiaries. The Corporation intends to disclose any amendments to, or waivers from, the Code of Business Conduct and Ethics for directors and executive officers by posting such information on its website. A copy of the Code of Business Conduct and Ethics is available on the Corporation's website at www.northerntrust.com.

Management Development and Succession Planning

The Board is responsible for succession planning for the position of CEO. The Board, led by the Compensation and Benefits Committee, annually conducts a formal management development and succession planning review with respect to the position of the CEO and other senior officers. This review focuses on CEO succession planning, as well as developing internal candidates for advancement within the Corporation. The Compensation and Benefits Committee makes recommendations to the Board concerning management development and succession planning. These recommendations reflect the Board's annual management development and succession planning review, as well as Committee discussions with and without the CEO. The Corporate Governance Committee discusses succession planning in the event of the unexpected death, incapacity, or resignation of the CEO and recommends to the Board, after consultation with the Chairman of the Compensation and Benefits Committee, an appropriate successor under such circumstances.

Director Nominations and Qualifications and Proxy Access

The Corporate Governance Committee is responsible for considering, evaluating, and recommending candidates for director. The Committee will consider persons nominated by stockholders in accordance with the nomination procedures specified in the Corporation's By-laws and described further under "Stockholder Proposals for 2022 Annual Meeting" on page 68. Stockholders also may recommend candidates for director by following the procedures for communicating with directors described below under "Communications with the Board and Independent Directors."

In its evaluation of director candidates, including persons recommended by stockholders, the Corporate Governance Committee considers the factors specified in the Corporation's Corporate Governance Guidelines to ensure the Board has a diversity of perspectives and backgrounds, including the nature of the expertise and experience required for the performance of the duties of a director of a corporation engaged in the Corporation's business and such matters as relevant business and industry experience, professional background, age, current employment, community service and other board service. The Committee also considers the racial, ethnicity, gender identity and other forms of diversity represented on the Board when assessing candidates. The Committee seeks to identify as candidates for director persons with a reputation for, and record of, integrity and good business judgment who: (i) have experience in positions with a high degree of responsibility and are leaders in the organizations with which they are affiliated; (ii) are free from conflicts of interest that could interfere with a director's duties to the Corporation and its stockholders; and (iii) are willing and able to make the necessary commitment of time and attention required for effective Board service. The Committee also takes into account a candidate's level of financial literacy, and monitors the mix of skills and experience of the directors in order to ensure the Board has the necessary collective expertise to perform its oversight function effectively. Following its evaluation process, the Committee recommends director nominees to the full Board, and the Board makes the final determination of director nominees based on its consideration of the Committee's recommendation.

The Corporation's By-laws also include a proxy access right, providing eligible stockholders the right to include, along with the candidates nominated by the Board, their own nominees for election to the Board in the Corporation's proxy materials. This proxy access right permits any stockholder, or group of up to 20 stockholders, who has maintained continuous qualifying ownership of 3% or more of the Corporation's outstanding common stock for at least the previous three years, and continues to own the required common stock through the date of the applicable annual meeting, to include in the Corporation's proxy materials such stockholder's own nominees for election to the Board constituting up to the greater of two individuals or 20% of the total number of directors, provided that such stockholder and its nominees satisfy the requirements specified in the Corporation's By-laws.

Stockholder Engagement

The Corporation recognizes the importance of engaging with stockholders and other key constituents. Open and constructive dialogue with stockholders helps further their understanding of our performance and strategies and allows us to receive direct feedback on issues relating to the Corporation. Accordingly, it is the Corporation's long-standing practice to engage proactively and routinely with stockholders throughout the year. This practice continued in 2020, with our CEO, CFO or other members of senior management engaging with stockholders representing approximately 40% of our outstanding shares regarding matters pertaining to the Corporation's performance, strategies and governance.

Corporate Social Responsibility

Corporate social responsibility is an essential element of our culture that aligns with the enduring principles of service, expertise and integrity that have shaped Northern Trust since the time of its founding. We place great importance on understanding the broader societal and environmental impacts of our business and on remaining socially accountable to our key stakeholders, including clients, employees, communities, and stockholders.

Our vision for corporate social responsibility is embedded at all levels of our organization. Our Board, and in particular its Corporate Governance Committee, engages in active oversight of our corporate social responsibility strategies, programs and principles. Further reflecting the importance of these matters, our Head of Corporate Social Responsibility and Global Diversity, Equity and Inclusion reports directly to our Chairman, President and CEO and is supported by a broader Executive Corporate Social Responsibility Council comprised of senior leaders within our organization.

For more information regarding our corporate social responsibility activities—including our focus on diversity, equity, and inclusion; community engagement; environmental impact; and sustainable investing—see "Helpful Resources—Corporate Social Responsibility" on page 75.

Communications with the Board and Independent Directors

Stockholders and other interested persons may communicate with any of the Corporation's directors, including the Lead Director or the independent directors as a group, by writing a letter addressed to the applicable director(s), c/o Northern

Trust Corporation, 50 South La Salle Street, B-3, Chicago, Illinois 60603, Attention: Corporate Secretary. Any stockholder or other interested person who has a particular concern regarding accounting, internal accounting controls, or other audit matters that he or she wishes to bring to the attention of the Audit Committee may communicate those concerns to the Audit Committee or its Chairman using the address indicated above. The Corporation's Corporate Secretary will review and forward communications to the appropriate member or members of the Board. The Corporate Secretary need not forward or retain any communications determined to be mass mailings, routine solicitations for business or contributions, or communications determined not to be relevant to the performance of the duties of the Board.

Securities Transactions Policy and Policy Against Hedging

Our Securities Transactions Policy prohibits directors, employees, including our named executive officers, and certain of their family members from purchasing or selling any type of security, whether issued by us or another company, while such persons are aware of material nonpublic information relating to the issuer of the security and from providing such material nonpublic information to any person who may trade while aware of such information. This policy also prohibits directors, employees, and certain of their family members from (i) engaging in short selling, margining, pledging or hypothecating the Corporation's securities; (ii) trading in options, warrants, puts, calls or similar instruments on the Corporation's securities; and (iii) engaging in any other transaction that hedges or offsets, or is designed to hedge or offset, any decrease in the market value of a Northern Trust equity security.

ITEM 2—ADVISORY VOTE ON EXECUTIVE COMPENSATION

Pursuant to Section 14A of the Exchange Act, and the rules and regulations promulgated thereunder by the SEC, the Corporation is required to include in this Proxy Statement a separate resolution, subject to an advisory vote, to approve the compensation of our named executive officers as disclosed in this Proxy Statement (commonly referred to as a "Say-on-Pay" advisory vote). In a nonbinding, advisory vote on the frequency of Say-on-Pay votes held at our 2017 Annual Meeting of Stockholders, stockholders voted in favor of conducting Say-on-Pay votes annually. In light of this result, and other factors considered by the Board, the Corporation will continue to hold Say-on-Pay votes on an annual basis. Accordingly, the Board is requesting that stockholders vote FOR approval of the following resolution:

"Resolved, that the compensation paid to the Corporation's named executive officers, as disclosed in its Proxy Statement dated March 9, 2021, pursuant to Item 402 of Regulation S-K of the Exchange Act, including the Compensation Discussion and Analysis, compensation tables, and narrative discussion, is hereby APPROVED."

As an advisory vote, this proposal is not binding on the Corporation. Although the vote is nonbinding, the Board and the Compensation and Benefits Committee value the opinions of our stockholders and, consistent with past practice, will consider the outcome of the vote when determining compensation policies and making future compensation decisions for our named executive officers.

The Corporation's executive compensation program and the framework used in evaluating and making 2020 compensation decisions for our named executive officers are described in the Compensation Discussion and Analysis that begins on page 29 of this Proxy Statement.

The Board unanimously recommends that you vote FOR this proposal.

COMPENSATION DISCUSSION AND ANALYSIS

Our Named Executive Officers

This Compensation Discussion and Analysis describes how we compensate our executives, including our 2020 named executive officers, which consist of the following individuals.

Name	Title
Michael G. O'Grady	Chairman, President and Chief Executive Officer
Jason J. Tyler	Chief Financial Officer
Peter B. Cherecwich	President—Corporate & Institutional Services
Steven L. Fradkin	President—Wealth Management
Shundrawn A. Thomas	President—Asset Management

Executive Summary

COVID-19 Response

The COVID-19 pandemic presented health and economic challenges on an unprecedented scale in 2020. During this time, Northern Trust focused on the health and well-being of its workforce, meeting its clients' needs and supporting its communities.

Workforce

In 2020, Northern Trust implemented its global business resiliency plan, with the vast majority of staff working remotely throughout the year. To ensure the health and well-being of those members of our workforce for whom it was essential to work from one of our locations, as well as our clients and other visitors, several social distancing elements and other protective measures were implemented, such as temperature screenings, where allowable by law, distribution of personal protective equipment, and workforce health self-certifications. Although planning is underway to return to the office on a location-by-location basis when conditions permit, the vast majority of staff is expected to continue to work remotely for some time to come.

Client Service

During the second quarter of 2020, Northern Trust became a lender under the PPP, administered by the SBA and intended to aid small businesses during the COVID-19 pandemic. Throughout 2020, Northern Trust originated more than 1,100 loans, with an aggregate original principal amount exceeding $220.0 million, under the PPP. In addition to lending under the PPP, Northern Trust elected to apply certain forms of relief to borrowers in response to the COVID-19 pandemic, including loan modifications and payment deferrals.

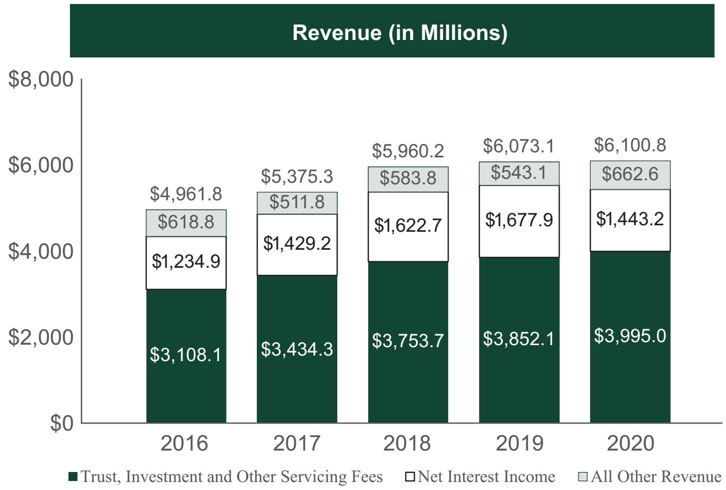
Community Support

In 2020, Northern Trust provided $2.5 million in COVID-19 relief support to numerous organizations serving those most affected by the pandemic. Northern Trust also provided $110.5 million in low-cost funding to assist CDFIs, which are instrumental in providing loans to small businesses and non-profit organizations under the PPP, throughout the year. The funding helps meet urgent demand among small businesses and non-profit groups by providing flexible terms and low rates. CDFIs provide loans, investments, financial services and technical assistance to underserved populations and communities. This funding was separate and distinct from the more than $220.0 million of loans made under the PPP.

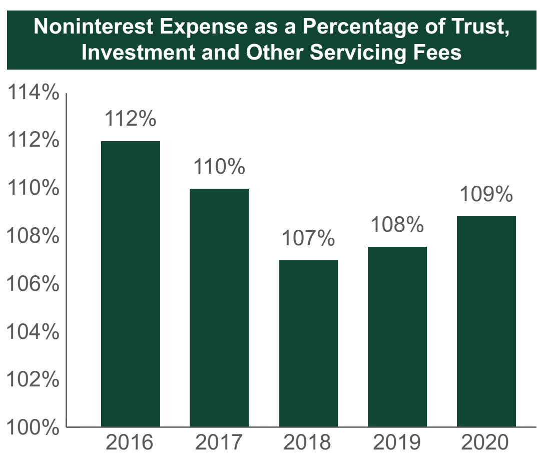
2020 Financial Performance Highlights

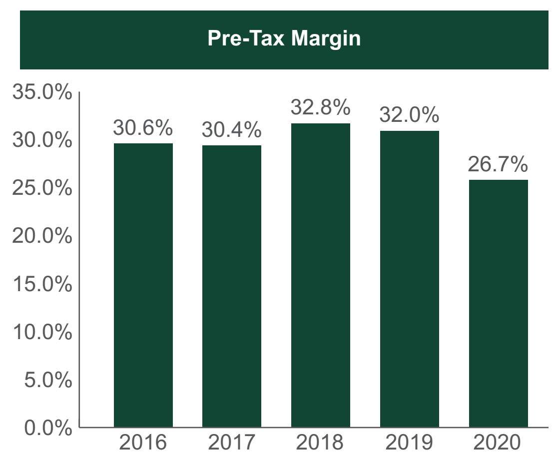
While our financial performance during 2020 was impacted by low interest rates and unprecedented challenges related to the COVID-19 pandemic, the three pillars of our financial strategy remained unchanged:

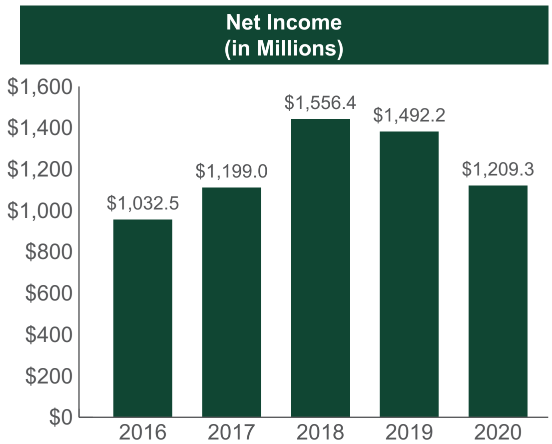
- **Achieving Growth** across the business, as demonstrated by continued growth in revenue and trust, investment and other servicing fees despite a substantial decline in net interest income and increased money market mutual fund fee waivers, each related to the current low-interest-rate environment.

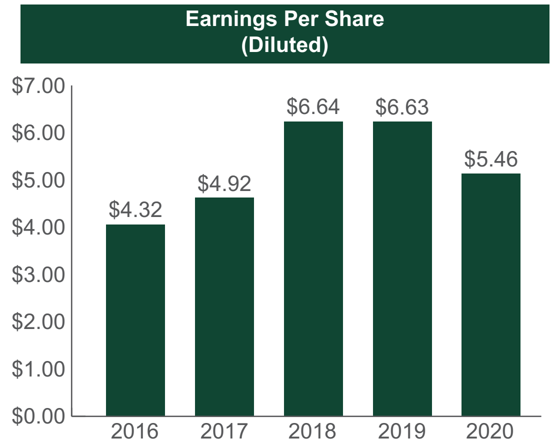


- **Driving Productivity and Profitability,** as demonstrated by our noninterest expense as a percentage of our trust, investment and other servicing fees remaining below the mid-point of levels reported in the most recent five years. Nevertheless, an increased provision for credit losses driven by current and projected economic conditions and downgrades in our loan portfolio resulting from the ongoing pandemic, as well as a substantial decline in net interest income and increased money market mutual fund fee waivers related to the low-interest-rate environment experienced in 2020, drove decreases in pre-tax margin, net income and earnings per share levels relative to recent years. We remain focused on continuing to improve our productivity and profitability, including through expense management initiatives and ongoing efforts to further embed a culture of sustainable expense management across the organization.

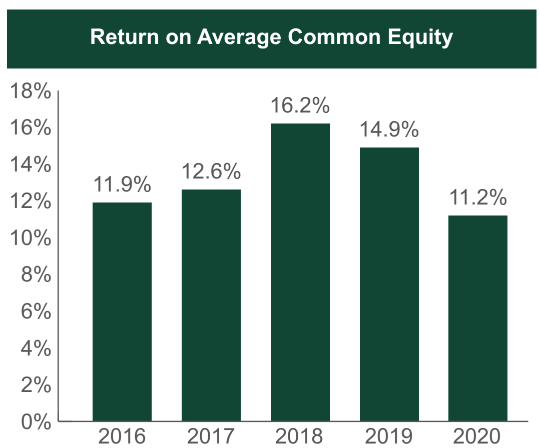


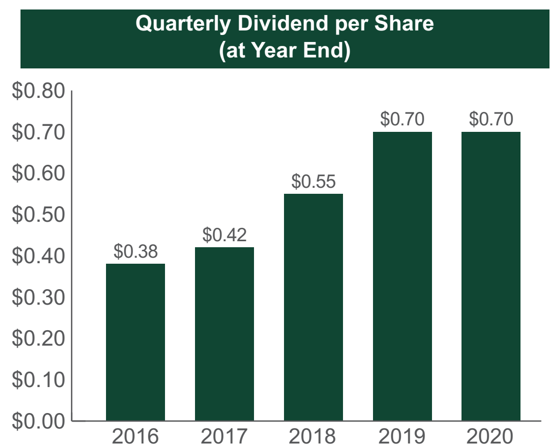






- **Generating Strong and Sustainable Stockholder Returns,** as demonstrated by our ROE remaining within our target range of 10 – 15%, and the consistency of our quarterly dividends to the holders of our common stock.





We achieved these financial results while continuing to support our clients' liquidity needs and maintaining strong capital ratios, with all ratios exceeding those required for classification as "well capitalized" under federal bank regulatory capital requirements.

Key Strategic Achievements

Execution on our strategies also was demonstrated through various strategic achievements, including:

- The continued success of our Wealth Management business's holistic approach to addressing unique client needs, and its differentiated service capabilities, including The Northern Trust Institute, which harnesses experience developed from advising generations of wealthy families to provide data-driven insights and guide our clients in achieving optimal wealth outcomes for their personal circumstances.

- Our Asset Management business's continued expansion of product and service offerings in the areas of greatest demand, including the launch of a new proprietary ESG scoring methodology that enables the integration of sustainability into investment portfolios in a more transparent and focused manner.

- Continued expansion of the C&IS business's product and service capabilities, including advanced currency management and outsourced front-office trading solutions.

- Our continued commitment to the communities in which we operate, with the launch of a new, highly focused philanthropic strategy that concentrates our volunteerism and contributions on four key areas of fundamental impact – educational excellence, food security, accessible healthcare and affordable housing – and our pledge of $20 million over the next five years with the goal of reducing the economic opportunity gap to facilitate the long-term financial success of those who face unfair hurdles because of their race, ethnicity, gender, geography or socio-economic conditions.

- The successful completion of our "Value for Spend" expense management initiative, announced in October 2017 with the goal of realizing $250 million of expense run-rate savings by 2020, and ongoing efforts to further embed a culture of sustainable expense management across the organization.

2020 Compensation Outcomes

Based upon its review of our corporate performance, as described above, and the individual performance of each named executive officer, discussed in this Compensation Discussion and Analysis, the Compensation and Benefits Committee approved the compensation amounts outlined in the table below. This table provides a comprehensive summary of each named executive officer's total direct compensation for the 2020 and 2019 performance years. This perspective may be useful in reviewing key incentive compensation decisions, as this is how the Committee considers performance and pay, with incentive compensation generally reflective of prior year's performance. It should be noted that the table below is not intended to be a substitute for the Summary Compensation Table on page 50, as certain amounts in the table below are different than the amounts in the Summary Compensation Table. The most significant difference is that this table reflects long-term incentive awards granted in February 2021 and February 2020 for the 2020 and 2019 performance years, respectively, while the Summary Compensation Table provides the value of the equity awards for the year in which they were granted.

Executive	Year	Salary (1)	Short-Term Annual Cash Incentive	Long-Term Incentives Performance Stock Units	Long-Term Incentives Restricted Stock Units	*Total Incentive Compensation (2)*	Total
Michael G. O'Grady	2020	$950,000	$1,175,000	$4,436,250	$2,388,750	*$8,000,000*	$8,950,000
Chairman, President and Chief Executive Officer	2019	950,000	2,075,000	4,436,250	2,388,750	*8,900,000*	9,850,000
Jason J. Tyler(3)	2020	500,000	650,000	1,137,500	612,500	*2,400,000*	2,900,000
Chief Financial Officer	2019	—	—	—	—	—	—
Peter B. Cherecwich	2020	625,000	900,000	1,592,500	857,500	*3,350,000*	3,975,000
President—Corporate & Institutional Services	2019	625,000	1,050,000	1,592,500	857,500	*3,500,000*	4,125,000
Steven L. Fradkin	2020	625,000	950,000	1,690,000	910,000	*3,550,000*	4,175,000
President—Wealth Management	2019	625,000	1,110,000	1,683,500	906,500	*3,700,000*	4,325,000
Shundrawn A. Thomas(3)	2020	625,000	900,000	1,592,500	857,500	*3,350,000*	3,975,000
President—Asset Management	2019	—	—	—	—	—	—

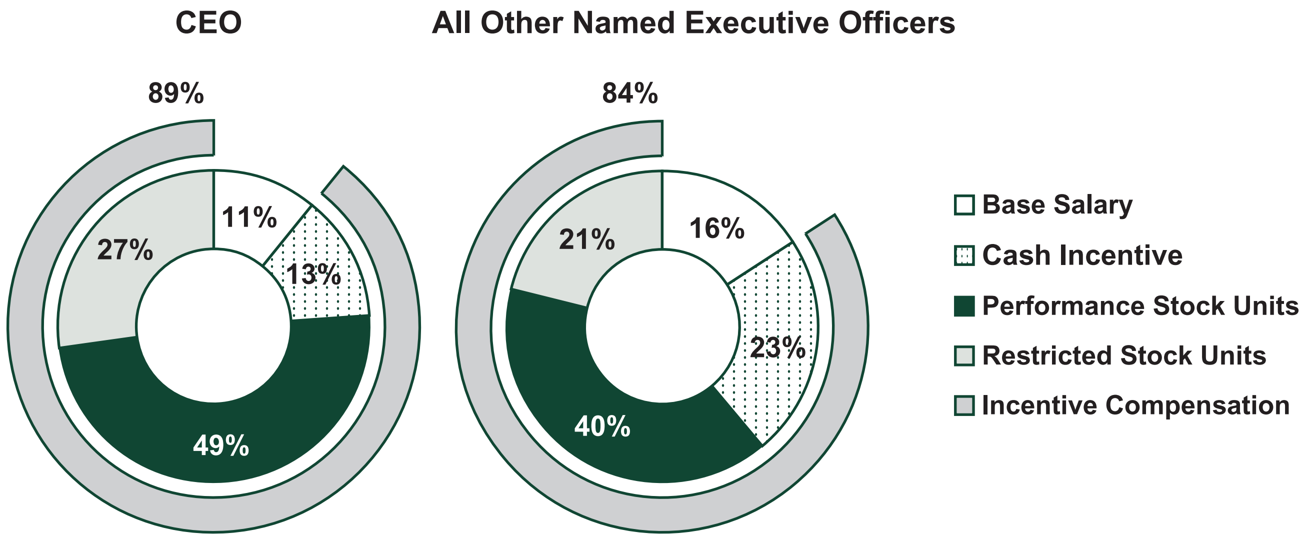
(1) Represents the applicable named executive officer's salary, as of February 2020 and 2019, respectively.

(2) Represents the total cash and equity incentive awards received by the applicable named executive officer in February 2021 for the 2020 performance year and February 2020 for the 2019 performance year, respectively.

(3) Messrs. Thomas and Tyler were not named executive officers in 2019, therefore, their 2019 total direct compensation is not provided.

The decrease in Mr. O'Grady's total incentive compensation reflects the Corporation's 2020 financial performance, which was adversely impacted by low interest rates and unprecedented challenges related to the COVID-19 pandemic. Incentives awarded to each of the other named executive officers in February 2021 are also reflective of such 2020 performance. Further information with respect to the performance factors impacting each named executive officer's compensation for 2020 can be found under "2020 Individual Performance Considerations" beginning on page 40.

Consistent with our pay for performance philosophy, the pay mix for our CEO and each of our other named executive officers heavily emphasizes incentive compensation. Our long-term incentive mix further emphasizes performance-based pay, with 65% of the long-term incentives being awarded in performance stock units earned based on performance over a three-year period, and 35% being awarded in restricted stock units which vest ratably over a four year period.



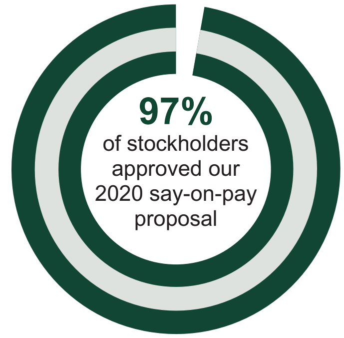
Compensation Governance Practices

We have implemented the compensation practices summarized below to ensure that our compensation program is effective in addressing stockholder objectives.

What We Do	What We Don’t Do
✓ Closely align pay and performance, with the Compensation and Benefits Committee validating this alignment annually	✗ Excise tax gross-ups for executive change in control arrangements
✓ Ensure performance-based compensation comprises the most significant portion of incentive compensation, with 65% of long-term incentives being awarded in performance stock units based on performance over a three-year period	✗ Single-trigger change in control benefits
✓ Subject short- and long-term incentive awards to potential forfeiture or clawback in the event of misconduct resulting in a restatement of our financial statements and certain other types of misconduct	✗ Short selling, margining, hedging, pledging or hypothecating company shares permitted under our Securities Transactions Policy and Procedures
✓ Ensure our executives meet robust stock ownership guidelines, including holding requirements for any executive below the stock ownership guidelines	✗ Compensation plans that encourage excessive risk-taking
✓ Use an independent compensation consultant to advise the Compensation and Benefits Committee	✗ Excessive perquisites
✓ Ensure overlapping membership between the Compensation and Benefits Committee and our Audit and Business Risk Committees	✗ Repricing of underwater options
	✗ Dividend equivalents distributed on unvested performance or restricted stock unit awards

2020 Advisory Vote on Executive Compensation

Our 2019 named executive officer compensation was approved on an advisory basis by our stockholders at our 2020 Annual Meeting of Stockholders. Approximately 97% of the votes present and entitled to vote at the meeting, including abstentions, supported approval of 2019 named executive officer compensation. Although such advisory votes are nonbinding, the Board reviews and thoughtfully considers the voting results when determining compensation policies and making future compensation decisions for named executive officers. Additionally, as mentioned under "Stockholder Engagement" beginning on page 26 of this Proxy Statement, it is our practice to engage proactively and routinely with stockholders throughout the year to help further their understanding of our performance and strategies and to allow us to receive direct feedback on issues relating to the Corporation. The decisions made by the Board and the Compensation and Benefits Committee with respect to compensation for 2020 reflect the Board and the Committee's belief, based on the results of the advisory vote on 2019 named executive officer compensation and our ongoing dialogue with stockholders, that our stockholders generally support our overall executive compensation program.



Guiding Principles for Executive Compensation

Our compensation philosophy enables us to attract, reward and retain talent at all levels who will contribute to our long-term success. With the goals of strong long-term financial performance and creating long-term stockholder value, our executive compensation program and compensation decisions are framed by the four guiding principles described below.

Guiding Principle	Impact on Compensation Design
Linked to Long-Term Performance	● Performance stock units, which constitute 65% of long-term incentive compensation, are based on achievement of three-year absolute ROE targets and, beginning with awards granted on February 18, 2020, our three-year relative ROE compared to that of our performance peer group.
Aligned with Stockholder Interests	● Majority of pay is delivered in long-term incentives (approximately 76% of 2020 total direct compensation for Mr. O'Grady). ● Executives are subject to robust stock ownership guidelines.
Positioned Competitively in the Marketplace	● Compensation levels are developed with reference to similar roles at a peer group of comparable companies.
Discourages Inappropriate Risk-Taking	● Short- and long-term incentives are subject to potential forfeiture or clawback in the event of misconduct resulting in a restatement of our financial statements and certain other types of misconduct, including inappropriate risk-taking resulting in "significant risk outcomes." ● Short-term cash incentive compensation awards and performance stock unit payouts are capped. ● Compensation and Benefits Committee can exercise negative discretion to reduce incentive compensation. ● Compensation program balances short-term and long-term performance objectives.

Risk Management

A key objective of our compensation program is to ensure that the incentive compensation design does not encourage inappropriate risk-taking. We have considered our incentive compensation program in light of the guidance provided by the Board of Governors of the Federal Reserve System (the "Federal Reserve") with respect to sound incentive compensation policies at financial institutions. We believe our compensation arrangements are consistent with our safety and soundness and appropriately aligned with our overall risk profile.

To reinforce the important role of effective risk management in our compensation framework, 65% of long-term incentive awards to named executive officers for 2020 performance were provided in performance stock units. Performance stock units, which contain meaningful performance targets for named executive officers and are payable in shares if those targets are attained, discourage inappropriate risk-taking behavior because they can only be earned by attaining long-term performance goals and because the value of the award is less susceptible than stock options to short-term fluctuations in share value. All long-term incentive awards vest over a multi-year period and have an inherent risk adjustment factor based on changes in the value of our common stock. Both short-term and long-term incentive compensation arrangements for named executive officers are subject to certain forfeiture and recoupment provisions. Further information with respect to these forfeiture and recoupment provisions for our named executive officers can be found under "Other Compensation Practices—Forfeiture and Recoupment."

The Compensation and Benefits Committee annually reviews management's assessment of the effectiveness of the design and performance of our incentive compensation arrangements and practices in providing risk-taking incentives that are consistent with the safety and soundness of the Corporation and its subsidiaries. This assessment includes an evaluation of whether our incentive compensation arrangements and practices discourage inappropriate risk-taking behavior by participants. In connection with the Committee's assessment, the Corporation's Chief Risk Officer presents an annual incentive compensation risk performance review, discussing his observations and assessments of risk performance for the Corporation and each of its significant businesses. The Committee will continue to monitor and, if necessary, revise our incentive compensation program to ensure that it continues to balance appropriately the objectives of stockholders, the needs of the business and risk concerns.

Pursuant to its charter, the Compensation and Benefits Committee is required to have at least one member who is a member of the Business Risk Committee and at least one member who is a member of the Audit Committee. This overlap in composition is intended to ensure that compensation decisions reflect the input of the Audit and Business Risk Committees.

Executive Compensation Program Elements

The table below provides a brief description of the elements of our 2020 compensation program and how each element helps address our guiding principles for executive compensation.

Element	Link to Compensation Philosophy	Rationale/Key Features
Base Salary	• Targeted at competitive levels among compensation peer group companies.	• Base salaries provide a fixed level of income consistent with a named executive officer's position and responsibilities, competitive pay practices and internal equity principles.
Incentive Compensation	• Total incentive funding for the Corporation is established as a percentage of pre-tax income. • Individual awards are targeted at competitive levels among compensation peer group companies, with actual awards varying to reflect both company and individual performance. • Allocated in a mix that is predominantly equity-based (at least 75% for the CEO and 70% for other named executive officers).	• The Compensation and Benefits Committee determines incentive awards based on a holistic assessment of corporate, business unit and individual performance along with consideration of internal equity and external market data.
Annual Cash Incentive	• Provides cash award to reward prior-year performance.	• Represents no more than 25% of incentive compensation for the CEO and 30% of incentive compensation for other named executive officers.
Performance Stock Units	• Provides deferred incentive compensation subject to future long-term performance outcomes. • Aligned with stockholders' interests by motivating executive officers to act as owners.	• Comprises 65% of equity compensation. • The number of shares that will vest will be determined based on three-year average annual absolute and relative ROE performance.
Restricted Stock Units	• Provides deferred incentive compensation subject to time-based vesting requirements. • Aligned with stockholders' interests by motivating executive officers to act as owners and provides enhanced retention.	• Comprises 35% of equity compensation. • Vests ratably over four years.
Retirement, Health and Welfare Benefits	• Targeted at competitive levels among peer group companies.	• Benefits are designed with broader employee populations in mind and are not specifically structured for executive officers.

Additional information with respect to each of the principal elements of our compensation program can be found beginning on page 38.

Award Determination Process

Role of the Board of Directors

The full Board of Directors sets the compensation of our Chairman and CEO. In determining the appropriate level of compensation for the Chairman and CEO, the Board gives substantial weight to the recommendation of the Compensation and Benefits Committee, but retains ultimate oversight and responsibility for such compensation decisions.

Role of the Compensation and Benefits Committee

During its February meeting each year, the Compensation and Benefits Committee discusses and determines the appropriate level of compensation for all executive officers. The Committee considers all elements of our executive compensation program holistically rather than each compensation element individually, and makes executive compensation decisions after careful review and analysis of financial and nonfinancial performance information, as well as historical and external market compensation data.

The Committee has the discretion to determine compensation in the context of individual performance in nonfinancial areas that are important to long-term growth and the enhancement of stockholder value. This flexibility allows the Committee to modify individual incentive payouts and long-term incentive awards to reflect:

- our business model and strategy;
- prevailing market trends;
- evolution in the financial and regulatory environment; and
- risk management objectives.

As discussed under "2020 Individual Performance Considerations" beginning on page 40 of this Proxy Statement, in considering the compensation for the Chairman and CEO, the Committee also evaluates his performance against established objectives for the year to which such compensation relates. The Committee shares this evaluation with the Board in order for the Board to set the Chairman and CEO's compensation.

Role of the Chairman and CEO

The Chairman and CEO presents the Compensation and Benefits Committee with recommendations on the total compensation for each of our other executive officers. These recommendations reflect performance against the past year's performance expectations, a mix of financial and nonfinancial performance factors, which are not formulaically weighted or scored, and external market data. These recommendations also reflect each of the other executive officer's performance with regard to business risks and individual adherence to risk and compliance policies and procedures. The Committee gives substantial weight to the recommendations of the Chairman and CEO, but retains the ultimate oversight and responsibility to set compensation for all executive officers, except for the Chairman and CEO, whose compensation is set by the Board with consideration given to the recommendations of the Committee.

Role of Human Resources

The Human Resources function provides materials to assist the Compensation and Benefits Committee in making executive compensation decisions, including current and historical compensation data for executive officers. Our Chief Human Resources Officer attends and participates in all Committee meetings. The Human Resources function also assists the Chairman and CEO in formulating his compensation recommendations for all other executive officers.

Role of the Compensation and Benefits Committee's Independent Compensation Consultant

The Compensation and Benefits Committee has retained Meridian Compensation Partners, LLC ("Meridian"), a nationally recognized executive compensation consulting firm, as its independent compensation consultant. The Committee confers with its independent compensation consultant to ensure that decisions and actions are consistent with stockholders' long-term interests and compensation-related best practices within the financial services industry. The Committee also references market data provided by its independent compensation consultant when considering compensation for executive officers. At least one representative of the Committee's independent compensation consultant attended all meetings of the

Committee during 2020. The Committee's independent compensation consultant provides insights into compensation trends and market practices, presents views on the compensation proposed by the Committee and participates in Committee meeting discussions and executive sessions. The Corporation does not engage the Committee's independent compensation consultant for additional services outside of providing executive compensation consulting to the Committee. The Committee conducted assessments of potential conflicts of interest and independence issues with respect to Meridian pursuant to applicable SEC rules and NASDAQ listing standards and no such conflicts or issues were identified.

Use of Compensation Peer Group and Market Data

To help to inform its decision-making, the Compensation and Benefits Committee reviews peer group data regarding competitive pay levels and overall compensation program design in the market place. The peer group utilized by the Committee for setting compensation has historically consisted of the Corporation's two most comparable trust and custody peers—The Bank of New York Mellon Corporation and State Street Corporation—as well as certain other banking, wealth management and asset management firms similar to the Corporation in certain respects, but not necessarily representing direct business competitors. The peer group utilized by the Committee in considering overall compensation plan design consists of a broader set of financial services firms with which the Corporation competes for business and talent.

The peer group reflected below was used to assess competitive compensation when developing base salary decisions and determining the size of short-term annual cash incentive awards and long-term incentive grants made in 2020 and 2021 based on the 2019 and 2020 performance years, respectively.

Compensation Peer Group

- BlackRock, Inc.
- Fifth Third Bancorp
- First Republic Bank
- Franklin Resources, Inc.
- KeyCorp
- M&T Bank Corporation
- State Street Corporation
- Truist Financial Corporation
- T. Rowe Price Group, Inc.
- The Bank of New York Mellon Corporation
- The Charles Schwab Corporation
- The PNC Financial Services Group, Inc.
- U.S. Bancorp

When making compensation decisions, the Compensation and Benefits Committee considers how the recommended compensation levels will compare to the median compensation for comparable positions among the peer group companies. The Committee also considers market data for comparable positions reported in certain financial services industry surveys. However, the Committee recognizes that the compensation levels may vary from market median compensation levels based on our performance or specific individual circumstances, including the executive's tenure in the role, the nature of the responsibilities of the executive and the executive's individual performance.

2020 Compensation Design and Decisions

Base Salary

The Compensation and Benefits Committee believes that base salaries should provide a fixed level of annual income consistent with an executive officer's position and responsibilities, competitive pay practices and internal equity among executive officers.

The Committee uses discretion in determining base salaries, considering the following factors:

- targeted base salary levels that balance market pay practices with internal equity principles;
- experience and qualifications of the individual executive;
- the executive officer's tenure in the position or a position of similar level;
- significant changes in assignment or scope of responsibility; and
- individual performance over the prior year relative to established goals and expectations for the position.

For new and recently promoted executives, the Committee's approach is to increase base salary incrementally to the appropriate target pay level as the executive officer gains experience and tenure in the new position.

Effective January 1, 2020, Mr. Tyler's base salary increased to $500,000 in conjunction with his appointment as CFO. No other action was taken in 2020 to increase the base salary of any other named executive officer.

Incentive Compensation

Annual incentive compensation provides an opportunity for our executive officers to receive awards based on our financial performance, as well as each executive officer's individual performance. We use a total incentive approach that provides cash and equity incentives based on prior-year performance with the total annual incentive pool funded based on a targeted percentage of pre-tax income. The Committee believes that its structured use of discretion in determining incentives for the named executive officers is appropriate as it allows the Committee to assess performance holistically across multiple dimensions of performance; provides for a year-end assessment of the operating environment and how well we performed relative to our direct peers; and ensures that the Committee has the ability to adjust incentives for how results were achieved (e.g., degree of risk taken, sustainability of results). The Committee also considers market data, each executive's performance, each executive's potential for future contributions to the organization and internal equity principles.

The Committee also determines the mix of incentive compensation awarded as a combination of cash and deferred equity awards. The Committee has established that a minimum of 75% of the CEO's incentive, and 70% of incentives for the other named executive officers, will be granted through long-term (i.e., equity) incentive awards of which 65% is granted as performance stock units and the remaining 35% is granted as restricted stock units.

Additionally, pursuant to the terms of the Corporation's Management Performance Plan, under which the annual cash incentive awards to our named executive officers are made, the amount of the annual cash incentive is limited based on a percentage of the consolidated net income generated by us in the applicable year. The annual cash incentive maximums for our named executive officers are as follows:

- annual cash incentives for the Chairman and the CEO may not exceed 0.6% of consolidated net income;
- annual cash incentives for the President (if not serving as CEO) and Chief Operating Officer may not exceed 0.4% of consolidated net income;
- annual cash incentives for the other named executive officers may not exceed 0.3% of consolidated net income; and
- no annual incentives can be paid in the absence of positive net income.

The final determination of individual annual incentives (both cash and equity) is not tied to any specific formula, rather the process that the Compensation and Benefits Committee uses to determine incentives relies on an assessment of quantitative and qualitative performance criteria for Northern Trust as a whole, specific businesses and individual executive officers.

The Committee held multiple discussions in January and February 2021 to discuss company and individual performance. In determining incentives in February 2021, the Committee gave consideration to our overall performance, the individual executive officer's performance, internal equity principles and peer group compensation levels. Factors considered when assessing performance included:

- Our overall financial performance, with a focus on key metrics, including:
    - Pre-tax income relative to plan and prior year; and
    - ROE.
- The performance of individual businesses in the following areas:
    - Growth (fees and revenue);
    - Productivity (expense management and ratio of noninterest expense to trust, investment and other servicing fees);
    - Profitability (pre-tax margin and ROE); and
    - Risk management, including operational resiliency.

Based on the performance considerations discussed in the executive summary of this Compensation Discussion and Analysis and under “2020 Individual Performance Considerations” below, in February 2021, the Committee awarded the named executive officers the incentive compensation amounts outlined in the table below.

			Long-Term Incentives		
Executive	Year	Short-Term Annual Cash Incentive	Performance Stock Units	Restricted Stock Units	Total Incentive Compensation
Michael G. O’Grady *Chairman, President and Chief Executive Officer*	2020	$1,175,000	$4,436,250	$2,388,750	$8,000,000
	2019	2,075,000	4,436,250	2,388,750	8,900,000
Jason J. Tyler(1) *Chief Financial Officer*	2020	650,000	1,137,500	612,500	2,400,000
	2019	—	—	—	—
Peter B. Cherecwich *President—Corporate & Institutional Services*	2020	900,000	1,592,500	857,500	3,350,000
	2019	1,050,000	1,592,500	857,500	3,500,000
Steven L. Fradkin *President—Wealth Management*	2020	950,000	1,690,000	910,000	3,550,000
	2019	1,110,000	1,683,500	906,500	3,700,000
Shundrawn A. Thomas(1) *President—Asset Management*	2020	900,000	1,592,500	857,500	3,350,000
	2019	—	—	—	—

(1) Messrs. Thomas and Tyler were not named executive officers in 2019, therefore, their 2019 total direct compensation is not provided.

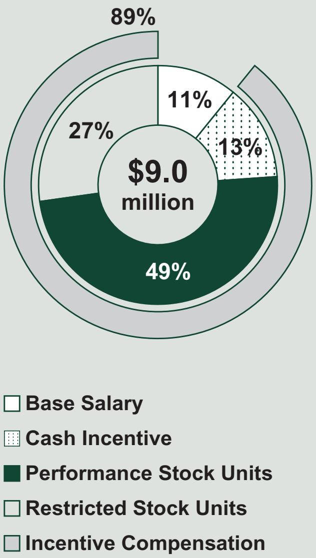
2020 Individual Performance Considerations

In determining total compensation for the named executive officers, the Compensation and Benefits Committee considered the Corporation’s 2020 financial performance, the performance of the Corporation’s leadership team as a whole, and how well each officer performed in his role. Further detail with respect to performance factors for each of the named executive officers is set forth on the following pages.

MICHAEL G. O'GRADY

Chairman, President and Chief Executive Officer

2020 TOTAL DIRECT COMPENSATION



Key Responsibilities

As the Corporation's Chairman, President and CEO, Mr. O'Grady is primarily responsible for leading the development and implementation of our corporate strategies; managing and developing our senior leaders; and embodying our guiding principles of service, expertise and integrity. To determine Mr. O'Grady's 2020 compensation, the Compensation and Benefits Committee and the Board considered the performance of the Corporation under Mr. O'Grady's leadership, the performance of the Corporation's leadership team as a whole, and how well Mr. O'Grady fulfilled his specific individual performance objectives. Mr. O'Grady's individual performance objectives were set in February 2020 at the direction of the Compensation and Benefits Committee and the full Board. In January 2021, the Compensation and Benefits Committee and the Board evaluated Mr. O'Grady's performance against the individual objectives established in February 2020. The Compensation and Benefits Committee and the Board considered not only whether Mr. O'Grady satisfied each of his individual performance objectives, but also how he satisfied such objectives. The Compensation and Benefits Committee and the Board also considered how Mr. O'Grady's compensation compared to that of peer CEOs and the additional experience and tenure gained in his role as CEO.

Performance Factors

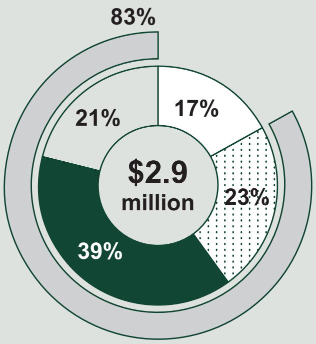
Mr. O'Grady's achievements and contributions to the Corporation's performance in 2020, many of which correlate to the individual performance objectives established for Mr. O'Grady in February 2020, are reflected in:

- Our resiliency in the face of, and overall response to, the ongoing COVID-19 pandemic, including our focus on the health and well-being of our workforce, our continued delivery of a high-level of service to meet our clients' needs, and our ability to support the communities in which we operate.
- Our continued high levels of client satisfaction.
- Mr. O'Grady's role in maintaining and developing client relationships across the globe through client outreach and engagement efforts and his contributions to our new business performance in 2020.
- Mr. O'Grady's role in developing senior leaders, maintaining a strong group of leaders in our succession plans and attracting and retaining talent throughout the Corporation.
- Mr. O'Grady's role in advancing initiatives to promote a diverse, adaptive and engaged workforce across the Corporation.
- Our successful execution of our "Value for Spend" expense management initiative and continued efforts to further embed a culture of sustainable expense management across the organization.
- Our overall financial performance in a challenging environment, including our:
    - Total consolidated revenue of $6.1 billion for 2020, up slightly from 2019.
    - Noninterest income of $4.7 billion for 2020, compared to $4.4 billion for 2019.
    - Net interest income of $1.4 billion for 2020, compared to $1.7 billion for 2019.
    - Pre-tax margin and noninterest expense as a percentage of trust, investment and other servicing fees of 26.7% and 109% for 2020, compared to 32.0% and 108%, respectively, for 2019.
    - Diluted earnings per share of $5.46 for 2020, compared to $6.63 for 2019.
    - ROE of 11.2% for 2020, down from 14.9% for 2019, but remaining within our target range of 10 - 15%.

JASON J. TYLER

Chief Financial Officer

2020 TOTAL DIRECT COMPENSATION



☐ Base Salary
☐ Cash Incentive
■ Performance Stock Units
☐ Restricted Stock Units
☐ Incentive Compensation

Key Responsibilities

As the Corporation's Chief Financial Officer, Mr. Tyler is primarily responsible for financial reporting and control, management reporting and analysis, liquidity management, capital planning and investor relations. To determine Mr. Tyler's 2020 compensation, the Compensation and Benefits Committee considered how well Mr. Tyler fulfilled his responsibilities in 2020 and his tenure in his current role.

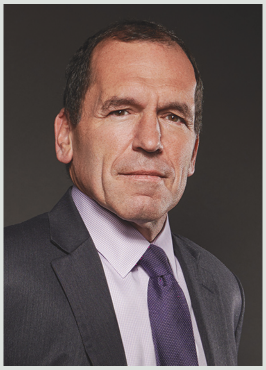
Performance Factors

Mr. Tyler's achievements and contributions to the Corporation's performance in 2020 are reflected in:

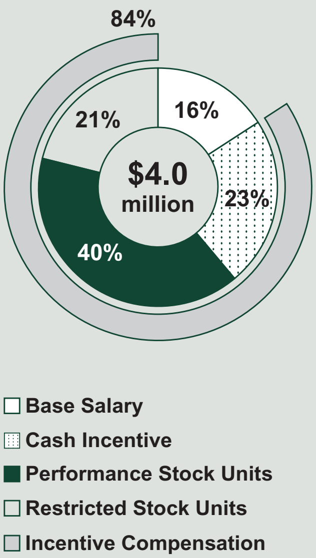
- Our continued financial strength throughout unprecedented market and economic conditions, including:
  - Our ability to support our clients' liquidity needs, with deposits growing 32% to $143.9 billion as of December 31, 2020 and loans and leases increasing 7% to end the year at $33.8 billion.
  - Our continued strong capital ratios, with our Common Equity Tier 1 ratio at 12.8% percent as of December 31, 2020.
  - The consistency of our quarterly common stock dividend, which remained at $0.70 per share as of December 31, 2020.
- Our successful execution of our "Value for Spend" expense management initiative and continued efforts to further embed a culture of sustainable expense management across the organization.
- Our successful issuance of $1.0 billion of 1.95% senior notes, due May 1, 2030.
- The strength of our investor relations program and quality of our dialogue with stockholders.
- Mr. Tyler's role in advancing our supplier diversity program and initiatives to encourage the economic development of diverse suppliers.
- Our overall financial performance in a challenging environment, including our:
  - Total consolidated revenue of $6.1 billion for 2020, up slightly from 2019.
  - Noninterest income of $4.7 billion for 2020, compared to $4.4 billion for 2019.
  - Net interest income of $1.4 billion for 2020, compared to $1.7 billion for 2019.
  - Pre-tax margin and noninterest expense as a percentage of trust, investment and other servicing fees of 26.7% and 109% for 2020, compared to 32.0% and 108%, respectively, for 2019.
  - Diluted earnings per share of $5.46 for 2020, compared to $6.63 for 2019.
  - ROE of 11.2% for 2020, down from 14.9% for 2019, but remaining within our target range of 10 - 15%.

PETER B. CHERECWICH

President—Corporate & Institutional Services



2020 TOTAL DIRECT COMPENSATION



Key Responsibilities

As the Corporation's President of Corporate & Institutional Services, Mr. Cherecwich is primarily responsible for the overall performance of such business. To determine Mr. Cherecwich's 2020 compensation, the Compensation and Benefits Committee considered how well Mr. Cherecwich fulfilled his responsibilities in 2020.

Performance Factors

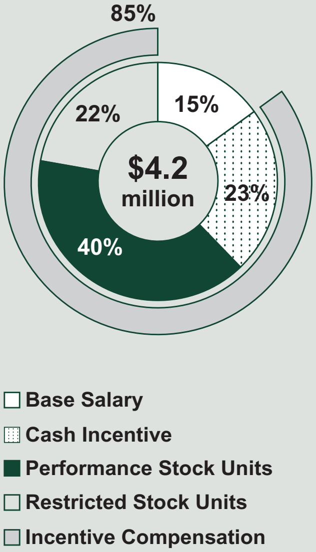
Mr. Cherecwich's achievements and contributions to the Corporation's performance in 2020 are reflected in:

- The C&IS business's resiliency in the face of, and overall response to, the ongoing COVID-19 pandemic, including its focus on the health and well-being of its workforce and continued delivery of a high-level of service to meet its clients' needs.
- The continued strong competitive position of the C&IS business within our target markets, with Northern Trust receiving "Best Custodian" and "Private Equity Fund Administrator of the Year" by *Private Equity Wire US Awards* and *Global Investor*, respectively.
- Growth in the C&IS business's assets under custody/administration to $13.7 trillion at December 31, 2020, from $11.3 trillion at December 31, 2019, a 21% increase.
- The C&IS business's continued strong momentum in key growth areas such as advanced currency management, integrated trading and outsourced front-office trading solutions.
- Growth in the C&IS business's trust, investment and other servicing fees to $2.3 billion for 2020, an increase of 5% over 2019 levels.
- Continued execution on digitalization strategies within the C&IS business, including with respect to Northern Trust Matrix®, our differentiated, event-driven data architecture.
- Mr. Cherecwich's role in advancing initiatives to promote a diverse, adaptive and engaged workforce across the C&IS business.
- The C&IS business's pre-tax income and margin, each on a fully taxable equivalent basis, of $695.1 million and 19.9%, respectively, as well as its noninterest expense as a percentage of trust, investment and other servicing fees of 119% for 2020, compared to $933.2 million, 26.4% and 118%, respectively, for 2019.

STEVEN L. FRADKIN

President—Wealth Management

2020 TOTAL DIRECT COMPENSATION



Key Responsibilities

As the Corporation's President of Wealth Management, Mr. Fradkin is primarily responsible for the overall performance of such business. To determine Mr. Fradkin's 2020 compensation, the Compensation and Benefits Committee considered how well Mr. Fradkin fulfilled his responsibilities in 2020.

Performance Factors

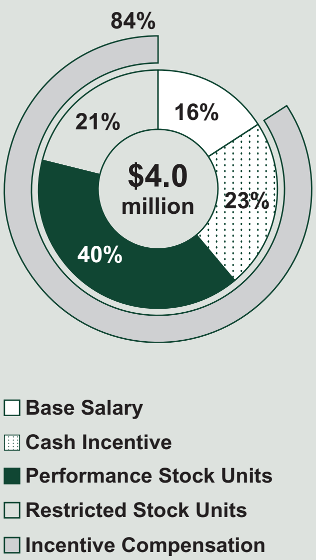
Mr. Fradkin's achievements and contributions to the Corporation's performance in 2020 are reflected in:

- The Wealth Management business's resiliency in the face of, and overall response to, the ongoing COVID-19 pandemic, including its focus on the health and well-being of its workforce and continued delivery of a high-level of service to meet its clients' needs.
- The continued strong competitive position of the Wealth Management business within our target markets, with Northern Trust named the "Best Private Bank" in the United States by the Financial Times Group.
- Continued success in the Wealth Management business's holistic approach to addressing unique client needs, with assets under management for our Goals Driven Wealth Management™ solutions increasing meaningfully in 2020.
- Execution on key growth strategies within the Wealth Management business, including the launch of The Northern Trust Institute, a research center dedicated to providing comprehensive, industry-leading advice to clients across the continuum of family wealth issues.
- Growth in the Wealth Management business's trust, investment and other servicing fees to $1.7 billion for 2020, an increase of 2% over 2019 levels.
- Growth in the Wealth Management business's revenue, on a fully taxable equivalent basis, of 3% year over year, increasing to $2.7 billion for 2020 from $2.6 billion for 2019.
- Mr. Fradkin's role in advancing initiatives to promote a diverse, adaptive and engaged workforce across the Wealth Management business.
- The Wealth Management business's pre-tax income and margin, each on a fully taxable equivalent basis, of $1.0 billion and 38.3%, respectively, as well as its noninterest expense as a percentage of trust, investment and other servicing fees of 93% for 2020, compared to $1.0 billion, 41.3% and 93%, respectively, for 2019.

SHUNDRAWN A. THOMAS

President—Asset Management

2020 TOTAL DIRECT COMPENSATION



Key Responsibilities

As the Corporation's President of Asset Management, Mr. Thomas is primarily responsible for the overall performance of such business. To determine Mr. Thomas's 2020 compensation, the Compensation and Benefits Committee considered how well Mr. Thomas fulfilled his responsibilities in 2020.

Performance Factors

Mr. Thomas's achievements and contributions to the Corporation's performance in 2020 are reflected in:

- The Asset Management business's resiliency in the face of, and overall response to, the ongoing COVID-19 pandemic, including its focus on the health and well-being of its workforce and continued delivery of a high-level of service to meet our clients' needs.
- The Asset Management business's successful navigation of the historic liquidity crisis in 2020, meeting unprecedented investor demand for liquidity throughout the year and continuing to expand our market share in the liquidity space.
- Our continued expansion of product and service offerings in the areas of greatest demand, including the launch of a new proprietary ESG scoring methodology that enables the integration of sustainability into investment portfolios in a more transparent and focused manner.
- Mr. Thomas's role in developing and maintaining client relationships across the globe and his contributions to the new business performance realized within our C&IS and Wealth Management businesses in 2020.
- The significant investments made to accelerate the digitalization of the Asset Management segment, including through various enhancements to Emotomy®, our open architecture, digital investment platform.
- Growth in our consolidated assets under management to $1.4 trillion at December 31, 2020, from $1.2 trillion at December 31, 2019, an increase of 14%.
- Mr. Thomas's role in advancing initiatives to promote a diverse, adaptive and engaged workforce across the Asset Management business.

Performance Stock Units

Performance stock units granted in February 2020 and 2021 will payout according to a formula that uses a comparison of our actual three-year average ROE to target results, as well as our three-year average ROE performance relative to that of our performance peer group. Performance stock units granted to our named executive officers in 2019 will payout based on our average absolute ROE performance over a three-year period relative to target results.

The Compensation and Benefits Committee believes that ROE is the appropriate performance metric upon which to base performance stock unit payouts as it is the primary financial performance metric used internally and externally to assess our long-term performance. The Committee further believes that a relative performance component of the formula upon which performance stock units will payout provides enhanced balance to the structure of the awards by taking into account the context in which our ROE is achieved. This balance ensures that executives will neither be rewarded for poor performance simply because it exceeds the performance of our performance peer group, nor will they be rewarded for performance that exceeds expectations if such performance is substandard relative to peers.

The performance peer group established by the Compensation and Benefits Committee and against which our ROE performance will be measured for purposes of a portion of performance stock unit vesting consists of the following institutions: Bank of America Corporation, Citigroup, Inc., JPMorgan Chase & Co., Morgan Stanley, State Street Corporation, The Bank of New York Mellon Corporation, The Charles Schwab Corporation, The Goldman Sachs Group, Inc., The PNC Financial Services Group, Inc., Truist Financial Corporation, U.S. Bancorp and Wells Fargo & Company. This group was selected by the Committee for performance comparison purposes because they represent those financial services companies based in the United States with the most comparable scale, cross-jurisdictional activity and regulatory regimes as the Corporation. Performance above the median of peers will result in award payouts above target, while performance below the median of peers will result in award payouts below target. As illustrated below, the payout scale approved by the Committee for performance stock units granted to named executive officers in February 2021 requires the Corporation to outperform its entire performance peer group in order to earn a maximum payout of 150% of target for the portion of the award based on the three-year average relative ROE.

The following table illustrates the vesting requirements for the performance stock unit grants to named executive officers in 2021. In setting the absolute three-year average annual ROE target for the performance stock unit awards at 11.0%, the Committee considered the Corporation's historical results as well its updated internal forecasts and analyst expectations based on the current and projected economic environment, including historically low interest rates which significantly impact our financial results. For performance stock unit awards granted in February 2021, the Committee increased the weighting for the three-year average relative ROE component from 25% to 50% to align better with market practice. As it is possible that there will be no payout under the performance stock units, these awards are completely "at-risk" compensation.

Performance Stock Unit Performance Schedule February 2021 Grants			
Three-Year Average Annual Rate of ROE (50% Weighting)	**Percentage of Stock Units Vested**	**Three-Year Average Annual Rate of ROE vs. Performance Peer Group (50% Weighting)**	**Percentage of Stock Units Vested**
< 6.0%	0%	< 25th Percentile	0%
6.0%	25%	25th Percentile	50%
11.0%	100%	50th Percentile	100%
≥ 13.0%	150%	Highest	150%

On January 19, 2021, shares of common stock underlying performance stock units granted in 2018 were distributed. The number of shares distributed was equal to 87.8% of target based on the Corporation's three-year average annual ROE of 14.1% (compared to a target of 15.0%) during the three-year performance period ended December 31, 2020, as determined by the Compensation and Benefits Committee.

Further discussion with respect to the performance stock units granted to our named executive officers in 2020 (as part of incentive compensation for 2019 performance) is set forth in the "Grants of Plan-Based Awards" and "Description of Certain Awards Granted in 2020" sections beginning on page 51 and 52, respectively, of this Proxy Statement.

Restricted Stock Units

Restricted stock units are viewed as an effective tool to align executives with stockholder interests by making them owners of our stock. Restricted stock units generally vest ratably over four years, which is effective in helping us to retain critical talent and ensuring that executives have significant outstanding unvested equity value over the course of their careers.

Further discussion with respect to the restricted stock units granted to our named executive officers is set forth in the "Description of Certain Awards Granted in 2020" section beginning on page 52 of this Proxy Statement.

Other Compensation Practices

Retirement, Health and Welfare Benefits

Retirement benefits are generally designed with our entire workforce in mind and are not specifically structured for the executive officers. The design of our retirement program for employees is market competitive. We target total retirement benefits at approximately the median level of retirement benefits of peer group companies. Our executive officers also participate in our health and welfare benefits, including medical, retiree medical, dental, disability and life insurance programs, on the same terms as other employees.

Severance Benefits and Change in Control Plan

We provide a severance plan to provide reasonable benefits to U.S. employees who are involuntarily terminated without cause due to a reduction in force, job elimination or similar reasons specified in the severance plan. We believe that the availability of severance benefits allows us to compete with our peer group companies in attracting and retaining talent. Executive officers in the United States participate in this plan on the same terms as all other similarly situated employees and may be eligible to receive severance benefits that include:

- a lump sum payment of two weeks of base salary for each year of completed service up to but less than 25 years, or 52 weeks of base salary for 25 years or more of completed service to us; and

- a COBRA subsidy based on their length of service to help cover the costs of continuation coverage under the employer's medical and dental plans, full vesting under The Northern Trust Company Thrift-Incentive Plan ("TIP"), the Northern Trust Corporation Supplemental Thrift-Incentive Plan ("Supplemental TIP"), The Northern Trust Company Pension Plan (the "Pension Plan"), the Northern Trust Corporation Supplemental Pension Plan (the "Supplemental Pension Plan"), and enhanced early retirement eligibility under the Pension Plan for employees who have reached age 54 with 14 years of credited service and outplacement assistance.

These benefits are contingent upon execution of a release, waiver and settlement agreement with us. These benefits are also limited to the lesser of two times the applicable executive officer's salary or two times the maximum amount that may be taken into account under a qualified plan pursuant to Internal Revenue Code Section 401(a)(17). In 2019 and 2020, these limits effectively capped benefits at $560,000 and $570,000, respectively. Further, these severance payments would be reduced by any severance payments made under any other benefit plan, program or individual contract.

In addition to the severance benefits discussed above, each named executive officer is a participant in the Northern Trust Corporation Executive Change in Control Severance Plan (the "Change in Control Plan"), providing participants with certain benefits upon a qualifying termination of employment within two years following a change in control. The purpose of the Change in Control Plan is to provide our executive officers with sufficient security to remain focused on their respective responsibilities during and after a change in control transaction without undue concern for their personal circumstances. We believe the Change in Control Plan is critical to our ability to attract and retain key executives in light of the fact that all named executive officers are employed at will and change in control benefits for executives are a standard element of a competitive compensation program at peer group companies.

Further discussion with respect to our Change in Control Plan, including disclosure of potential change in control benefits payable to each named executive officer, assuming a change in control of the Corporation and termination of employment on December 31, 2020, is set forth in the "Potential Payments Upon Termination of Employment or a Change in Control of the Corporation" section beginning on page 58 of this Proxy Statement.

Perquisites

We provide a limited number of perquisites intended to assist executive officers in the performance of their duties on behalf of the Corporation. We provide wealth planning and tax consulting services and personal use of company automobiles as perquisites to our executive officers. If circumstances warrant and if pre-approved by our CEO, we permit personal use of private aircraft on a limited basis. We also reimburse executive officers for the payment of personal income taxes in connection with the use of company vehicles in certain circumstances and taxable relocation expenses. In 2020, we also piloted a health screening program available to certain of our executive officers. The Compensation and Benefits Committee periodically reviews the types and costs of perquisites to ensure they remain aligned with our compensation philosophy.

Stock Ownership Guidelines

Supporting our guiding principle of alignment with stockholders' interests, we have a long-standing practice of emphasizing stock ownership and maintaining robust stock ownership guidelines for named executive officers. The stock ownership guidelines to which the Corporation's executive officers currently are subject are as follows:

Stock Ownership Guidelines* Expected Ownership as Multiple of Base Salary	
Chairman / CEO	8x
President	5x
Chief Operating Officer / Chief Financial Officer / Business Unit Heads	4x
Chief Accounting Officer	0.5x
Other Executive Officers	3x

* If an individual holds multiple positions subject to these stock ownership guidelines, he or she will be subject to the highest stock ownership guideline associated with his or her positions.

Each executive officer is expected to meet his or her respective minimum ownership level by the fifth anniversary of becoming an executive officer or assuming a new position with a higher stock ownership guideline. If the minimum ownership level requirement is not met upon or at any time after such date, he or she will be required to retain 100% of the net, after-tax shares received upon vesting of equity awards or stock option exercises until the minimum is met. As of December 31, 2020, each of our named executive officers met or exceeded our stock ownership guidelines, except for Mr. Tyler who is expected to reach the minimum share ownership threshold within his transition period ending on January 1, 2025.

Forfeiture and Recoupment

Both short-term and long-term incentive awards granted to named executive officers are subject to forfeiture or recoupment in the event of misconduct resulting in a restatement of the Corporation's financial statements and certain other types of misconduct. Such awards also are subject to forfeiture and recoupment provisions relating to "ex-post" risk, meaning risk resulting from the recipient's inappropriate risk-taking that does not materialize until after the performance period in which such inappropriate risk-taking takes place. Additionally, all restricted stock units awarded to named executive officers are subject to forfeiture or recoupment if it is determined that the applicable named executive officer has engaged in inappropriate risk-taking which resulted in certain events deemed to be "significant risk outcomes." An analysis of significant risk outcomes is completed annually to determine if such significant risk outcomes were tied to inappropriate risk-taking. The results of this analysis are reviewed by the Compensation and Benefits Committee.

Hedging and Pledging Policy

We maintain a Securities Transactions Policy which, among other things, prohibits directors, employees, and certain of their family members from (i) engaging in short selling, margining, pledging or hypothecating our securities; (ii) trading in options, warrants, puts, calls or similar instruments on our securities; and (iii) engaging in any other transaction that hedges or offsets, or is designed to hedge or offset, any decrease in the market value of a Northern Trust equity security.

COMPENSATION AND BENEFITS COMMITTEE REPORT

The Compensation and Benefits Committee is responsible for providing oversight of the compensation of the directors and executive officers of the Corporation. In fulfilling its oversight responsibilities, the Committee has reviewed and discussed with management the Compensation Discussion and Analysis contained in this Proxy Statement. Based upon this review and discussion, the Committee recommended to the Board that the Compensation Discussion and Analysis be included in the Corporation's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, and this Proxy Statement for the 2021 Annual Meeting of Stockholders, each of which is filed with the SEC.

Compensation and Benefits Committee

Thomas E. Richards (Chair)
Linda Walker Bynoe
Jay L. Henderson
Jose Luis Prado
Charles A. Tribbett III

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth the information concerning the compensation paid to or earned by the named executive officers for 2020, 2019 and 2018.

Name and Principal Position	Year	Salary ($)	Stock Awards ($)(1)	Non-Equity Incentive Plan Compensation ($)(2)	Change in Pension Value and Nonqualified Deferred Compensation Earnings ($)(3)	All Other Compensation ($)(4)	Total ($)
Michael G. O'Grady	2020	$950,000	$6,825,082	$1,175,000	$ 202,180	$37,552	$9,189,814
Chairman, President and Chief Executive Officer	2019	937,500	6,225,141	2,075,000	186,150	35,977	9,459,768
	2018	900,000	4,850,107	2,075,000	112,894	33,985	7,971,986
Jason J. Tyler	2020	500,000	600,039	650,000	55,259	15,050	1,820,348
Chief Financial Officer	—	—	—	—	—	—	—
	—	—	—	—	—	—	—
Peter B. Cherecwich	2020	625,000	2,450,068	900,000	151,058	23,504	4,149,630
President—Corporate & Institutional Services	2019	625,000	2,590,143	1,050,000	166,670	35,441	4,467,254
	2018	618,750	2,200,062	1,110,000	129,848	21,939	4,080,599
Steven L. Fradkin	2020	625,000	2,590,122	950,000	1,575,071	25,729	5,765,922
President—Wealth Management	2019	625,000	2,660,079	1,110,000	1,782,456	25,219	6,202,754
	2018	625,000	2,300,174	1,140,000	—	30,725	4,095,899
Shundrawn A. Thomas	2020	625,000	2,310,116	900,000	203,097	16,878	4,055,091
President—Asset Management	—	—	—	—	—	—	—
	—	—	—	—	—	—	—

(1) Amounts in this column represent the grant date fair value of the restricted stock unit and performance stock unit awards computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, Stock Compensation ("FASB ASC Topic 718"). See "Note 24—Share-Based Compensation Plans" to the consolidated financial statements included in Item 8 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2020 for a discussion of the assumptions made by the Corporation in the valuation of these stock unit awards. This column includes the following amounts in 2020 with respect to performance stock units, which are based on achievement of target performance levels: Mr. O'Grady: $4,436,318; Mr. Tyler: $390,010; Mr. Cherecwich: $1,592,509; Mr. Fradkin: $1,683,559; and Mr. Thomas: $1,501,560. If the maximum level of performance were attained, the value of the performance stock units would be as follows: Mr. O'Grady: $6,654,478; Mr. Tyler: $585,016; Mr. Cherecwich: $2,388,764; Mr. Fradkin: $2,525,388; and Mr. Thomas: $2,252,341. See the narrative under "Description of Certain Awards Granted in 2020" beginning on page 52 of this Proxy Statement for more information on these awards.

(2) Amounts in this column represent the annual cash incentives earned by the named executive officers in the applicable years under the Management Performance Plan.

(3) Amounts in this column represent the aggregate increase in actuarial present values of accumulated benefits under the Pension Plan and the Supplemental Pension Plan. As described further under "Pension Benefits" beginning on page 55 of this Proxy Statement, benefits for Mr. Fradkin are accrued under the Pension Plan's "Traditional Formula," while benefits for Messrs. O'Grady, Tyler, Cherecwich, and Thomas are accrued under the Pension Plan's "PEP Formula." At December 31, 2018, the applicable discount rate for the Pension Plan and the Supplemental Pension Plan increased to 4.47%, resulting in a decrease in the present value of benefits under the Traditional Formula for Mr. Fradkin relative to December 31, 2017, of $199,315. At December 31, 2019, the applicable discount rate for the Pension Plan and the Supplemental Pension Plan decreased to 3.37%, resulting in an increase in the present value of benefits under the Traditional Formula. At December 31, 2020, the applicable discount rate under the Pension Plan decreased to 2.75% and the applicable discount rate under the Supplemental Pension Plan decreased to 2.45%, resulting in an increase in the present value of benefits under the Traditional Formula.

(4) The following table sets forth a detailed breakdown of the items which comprise “All Other Compensation” for 2020.

Name	Contributions to TIP and Supplemental TIP ($)(a)	Perquisites and Other Personal Benefits ($)(b)	Tax Reimbursements and Other ($)(c)	Total ($)
Mr. O’Grady	$28,500	$7,983	$1,069	$37,552
Mr. Tyler	15,000	50	—	15,050
Mr. Cherecwich	18,750	4,512	242	23,504
Mr. Fradkin	18,750	6,747	232	25,729
Mr. Thomas	8,550	8,249	79	16,878

(a) Includes matching contributions made by the Corporation on behalf of named executive officers participating in TIP and Supplemental TIP.

(b) With respect to Mr. O’Grady, includes wealth planning and tax consulting services ($6,500) and personal use of company automobiles ($1,483). With respect to Mr. Tyler, includes personal use of company automobiles ($50). With respect to Mr. Cherecwich, includes wealth planning and tax consulting services ($4,100) and personal use of company automobiles ($412). With respect to Mr. Fradkin, includes wealth planning and tax consulting services ($6,500) and personal use of company automobiles ($247). With respect to Mr. Thomas, includes personal use of company automobiles ($99) and participation in an executive health screening program ($8,150).

(c) With respect to Mr. O’Grady, includes tax reimbursements provided in connection with personal use of company automobiles ($1,069). With respect to Mr. Cherecwich, includes tax reimbursements provided in connection with personal use of company automobiles ($242). With respect to Mr. Fradkin, includes tax reimbursements provided in connection with personal use of company automobiles ($197). With respect to Mr. Thomas, includes tax reimbursements provided in connection with personal use of company automobiles ($79).

Grants of Plan-Based Awards

		Estimated Possible Payouts Under Non-Equity Incentive Plan Awards (1)			Estimated Future Payouts Under Equity Incentive Plan Awards (2)				
Name	Grant Date	Thres-hold ($)	Target ($)	Maximum ($)	Thres-hold (#)	Target (#)	Maximum (#)	All Other Stock Awards: Number of Shares of Stock or Units (#)(3)	Grant Date Fair Value of Stock and Option Awards ($)(4)
Mr. O’Grady	—		$2,075,000	$7,255,800					
	2/18/2020							23,691	$2,388,764
	2/18/2020				11,000	43,998	65,997		4,436,318
Mr. Tyler	—		400,000	3,627,900					
	2/18/2020							2,083	210,029
	2/18/2020				967	3,868	5,802		390,010
Mr. Cherecwich	—		1,050,000	3,627,900					
	2/18/2020							8,505	857,559
	2/18/2020				3,949	15,794	23,691		1,592,509
Mr. Fradkin	—		1,110,000	3,627,900					
	2/18/2020							8,991	906,563
	2/18/2020				4,175	16,697	25,046		1,683,559
Mr. Thomas	—		990,000	3,627,900					
	2/18/2020							8,019	808,556
	2/18/2020				3,723	14,892	22,338		1,501,560

(1) These columns show information regarding payouts under the Management Performance Plan. The amount set forth under the Maximum column represents the highest potential payout under the plan based on the Corporation’s 2020 performance. Although the plan does not provide for a target or threshold, the amount set forth under the Target column represents the amount actually awarded to the named executive officer in 2020 in respect of 2019 performance.

(2) The amounts set forth under the Threshold, Target and Maximum columns represent the number of shares of common stock that would be paid out under the performance stock units granted in February 2020 if the Corporation achieves a three-year average annual ROE relative to pre-established goals of 8.0%, 15.0% or 18.5% or greater, respectively, as well as ROE performance relative to that of our performance peer group that is in the 25th percentile, 50th percentile or the highest percentile, respectively.

(3) This column shows the number of restricted stock units granted to the named executive officers in 2020.

(4) Represents the grant date fair value of each equity award, computed in accordance with FASB ASC Topic 718 (using the target level of performance for performance stock unit awards), disregarding any estimated forfeitures.

Description of Certain Awards Granted in 2020

Performance Stock Units

Each performance stock unit constitutes the right to receive a share of the Corporation's common stock and vests over a three-year performance period, subject to satisfaction of specified performance targets ("performance conditions") that are a function of ROE, and continued employment until the end of the vesting period. Dividend equivalents granted to named executive officers in 2020 are deferred into a cash account and paid at the time the award vests only with respect to the portion of the cash account attributable to performance stock units that actually vest upon satisfaction of the applicable performance conditions.

For awards granted to named executive officers in 2020, if during the performance period the executive's employment is terminated under certain circumstances entitling the executive to benefits under the Corporation's severance plan, such executive's performance stock units will be eligible for full vesting and distribution at the end of the performance period, subject to certain conditions, including satisfaction of the applicable performance conditions. Upon the death or disability of an executive during the performance period, or if an executive retires after satisfying applicable age and service requirements, such executive's performance stock units will be eligible for full vesting and distribution at the end of the performance period, subject to certain conditions, including satisfaction of the applicable performance conditions.

Upon a change in control of the Corporation, a pro rata portion of each performance stock unit award (based on actual performance during the portion of the performance period that has elapsed as of the change in control) will be converted into an award with respect to the acquirer of an equal economic value. The remainder of the performance award converts at the target level of performance specified in the performance stock unit agreement into an award with respect to the acquirer of an equal economic value. Both the portion of each performance stock unit award that is based on actual performance and the portion that is based on the target level of performance vest subject only to the continued employment of the recipient through the remainder of the applicable performance period, and are paid out at the end of the performance period, subject to acceleration of vesting upon a qualifying termination, in which event the units are distributed within sixty days. In the event that a change in control occurs and the acquirer refuses or is unable to agree to the foregoing conversion and vesting provisions, the award will be vested at the time of the change in control.

Restricted Stock Units

Restricted stock units granted to our named executive officers in 2020 vest 25% each year for four years. Each restricted stock unit award entitles an executive to receive one share of common stock when the award vests, subject to continued employment until the end of the vesting period. Dividend equivalents on these restricted stock units are deferred into a cash account and paid at the time the awards vest only with respect to the portion of the cash account attributable to restricted stock units that actually vest.

For awards granted to named executive officers in 2020, if during the vesting period an executive's employment is terminated under certain circumstances entitling the executive to benefits under the Corporation's severance plan, such executive's restricted stock units will continue to vest in accordance with their terms. In addition, if an executive retires after satisfying applicable age and service requirements, such executive's restricted stock units will continue to vest in accordance with their terms. Upon the death or disability of an executive during the vesting period, such executive's restricted stock units will be eligible for full vesting and distribution.

Upon a change in control of the Corporation, all restricted stock units granted to executive officers will, under the terms and conditions of the applicable award agreements, be converted into units of the acquirer having the same value and continue to vest over a period no longer than the original vesting schedule; provided, however, that they become fully vested in connection with a change in control if the executive experiences a qualifying termination of employment following the change in control (in which case they are distributed within sixty days). In the event that a change in control occurs and the acquirer refuses or is unable to agree to the foregoing conversion and vesting provisions, the award will be vested at the time of the change in control.

Outstanding Equity Awards at Fiscal Year-End

	Option Awards				Stock Awards			
Name	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)(1)	Market Value of Shares of Units of Stock That Have Not Vested ($)(2)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)(3)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested ($)(4)
Mr. O'Grady	96,700	—	$38.78	10/18/2021	53,837	$5,014,378	117,612	$10,954,382
	48,110	—	43.65	2/13/2022				
	28,469	—	52.69	2/11/2023				
	24,651	—	60.85	2/10/2024				
	23,739	—	70.21	2/17/2025				
	34,489	—	58.25	2/16/2026				
	30,487	10,162(5)	88.06	2/21/2027				
Mr. Tyler	4,835	—	38.78	10/18/2021	4,785	445,675	6,630	617,518
	3,437	—	43.65	2/13/2022				
	2,491	—	52.69	2/11/2023				
	2,466	—	60.85	2/10/2024				
	2,968	—	70.21	2/17/2025				
	4,599	—	58.25	2/16/2026				
	2,905	968(5)	88.06	2/21/2027				
Mr. Cherecwich	19,599	6,533(5)	88.06	2/21/2027	21,458	1,998,598	47,553	4,429,086
Mr. Fradkin	12,325	—	60.85	2/10/2024	22,454	2,091,366	49,566	4,616,577
	23,739	—	70.21	2/17/2025				
	34,489	—	58.25	2/16/2026				
	20,906	6,968(5)	88.06	2/21/2027				
Mr. Thomas	4,748	—	70.21	2/17/2025	16,711	1,556,463	37,413	3,484,647
	7,741	—	58.25	2/16/2026				
	5,808	1,935(5)	88.06	2/21/2027				

(1) The following table lists the number of restricted stock units vesting for each named executive officer upon each vest date:

Name	2/21/2021	3/1/2021	3/1/2022	3/1/2023	3/1/2024
Mr. O'Grady	4,471	15,832	15,832	11,780	5,922
Mr. Tyler	426	1,369	1,369	1,101	520
Mr. Cherecwich	2,758	6,141	6,141	4,378	2,040
Mr. Fradkin	2,936	6,402	6,402	4,558	2,156
Mr. Thomas	852	5,036	5,036	3,783	2,004

(2) The market value of the restricted stock units included in this column is based on a price of $93.14 per share (the closing market price of the Corporation's common stock on December 31, 2020).

(3) The following table lists the target number of shares each named executive officer may receive under performance stock units:

Name	Performance Stock Unit Award Granted In 2018	2019	2020
Mr. O'Grady	30,105	43,509	43,998
Mr. Tyler	1,987	775	3,868
Mr. Cherecwich	13,656	18,103	15,794
Mr. Fradkin	14,277	18,592	16,697
Mr. Thomas	9,311	13,210	14,892

The actual number of shares distributed with respect to performance stock units granted in 2019 and 2020 will be based upon the satisfaction of certain performance conditions. Accordingly, it is possible that no shares of common stock will be distributed under these performance stock units.

The following table lists the actual number of shares distributed to each named executive officer on January 19, 2021 with respect to performance stock units granted in 2018:

Name	Shares
Mr. O'Grady	26,432
Mr. Tyler	1,745
Mr. Cherecwich	11,990
Mr. Fradkin	12,535
Mr. Thomas	8,175

(4) The market value of the performance stock units included in this column is based on a price of $93.14 per share (the closing market price of the Corporation's common stock on December 31, 2020).

(5) Options originally granted February 21, 2017, with 25% of the award vesting on each anniversary of the grant date. Accordingly, all remaining unvested options vest on February 21, 2021.

Option Exercises and Stock Vested

The following table sets forth information regarding exercises of stock options and vesting of stock awards for each named executive officer in 2020.

	Option Awards		Stock Awards	
Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)(1)	Number of Shares Acquired On Vesting (#)	Value Realized On Vesting ($)(2)
Mr. O'Grady	—	$ —	41,156	$4,194,599
Mr. Tyler	—	—	4,010	409,910
Mr. Cherecwich	32,403	1,228,922	25,069	2,585,928
Mr. Fradkin	7,117	214,854	27,424	2,828,960
Mr. Thomas	—	—	9,149	914,731

(1) The value realized on the exercise of stock options represents the pre-tax difference between the option exercise price and the fair market value of the common stock on the date of exercise.

(2) The value realized on the distribution of stock units represents the number of stock units that vested multiplied by the fair market value of the common stock on the date of vesting.

Pension Benefits

Information with respect to accrued benefits of each named executive officer under the Pension Plan and the Supplemental Pension Plan for each named executive officer as of December 31, 2020 is as follows.

Name	Plan Name	Number of Years Credited Service (#)	Present Value of Accumulated Benefit ($)
Mr. O'Grady	Pension Plan	9.4	$ 107,685
	Supplemental Pension Plan	9.4	796,786
Mr. Tyler	Pension Plan	9.3	108,019
	Supplemental Pension Plan	9.3	191,355
Mr. Cherecwich	Pension Plan	13.5	164,353
	Supplemental Pension Plan	13.5	738,553
Mr. Fradkin	Pension Plan	35.0	2,018,955
	Supplemental Pension Plan	35.0	8,864,491
Mr. Thomas	Pension Plan	16.5	223,496
	Supplemental Pension Plan	16.5	707,264

Pension Plan and Supplemental Pension Plan

The Pension Plan is a tax-qualified defined benefit retirement plan that provides a retirement benefit as described below, which is subject to various limitations of the Internal Revenue Code and the Pension Plan. The Supplemental Pension Plan is a nonqualified defined benefit retirement plan that provides the portion of an employee's benefit that cannot be paid under the Pension Plan due to Internal Revenue Code and Pension Plan limits.

Eligibility and Vesting

Eligible employees participate in the Pension Plan beginning the first day of the month following the completion of six months of vesting service. Employees with at least six months of vesting service who would have a portion of their benefit from the Pension Plan limited due to Internal Revenue Code or Pension Plan restrictions also participate in the Supplemental Pension Plan. A participant is eligible to receive a benefit under the Pension Plan and Supplemental Pension Plan after completing three years of vesting service.

Benefit Formula—Traditional Formula

Prior to April 1, 2012, the benefit for Mr. Fradkin was determined under the Pension Plan's "Traditional Formula." The normal retirement (age 65) benefit equals (i) 1.8% of the average of the participant's highest sixty consecutive calendar months of eligible pay multiplied by the participant's years of credited service (up to a maximum of thirty-five years) minus (ii) 0.5% multiplied by offset compensation equal to the lesser of the participant's (a) Social Security covered compensation limit or (b) the average of the participant's eligible pay for the three consecutive calendar years prior to retirement, with calendar year compensation not to exceed the Social Security taxable wage base in effect for a given calendar year, multiplied by the participant's years of credited service (up to thirty-five years). Mr. Fradkin's pre-April 1, 2012 Traditional Formula benefits will be based on credited service and average compensation calculated as of March 31, 2012, provided that his average compensation and offset compensation as of March 31, 2012, will be indexed at a rate of 1.5% per year for any period on and after April 1, 2012, during which he earns credited service under the Pension Plan.

Benefit Formula—PEP Formula

Effective June 1, 2001, the Pension Plan was amended to provide that benefits of all newly U.S. hired employees of the Corporation and its affiliates would be calculated under the Pension Plan's "Pension Equity Plan (PEP) Formula." Because Messrs. O'Grady, Tyler, Cherecwich, and Thomas commenced employment after such date, their benefits under the Pension Plan and Supplemental Pension Plan are calculated entirely under the PEP Formula. Effective April 1, 2012, the Pension Plan was further amended to provide that for credited service earned after March 31, 2012, all employees, including those who had previously elected the Traditional Formula, will accrue benefits pursuant to the revised PEP Formula described below. Accordingly, Mr. Fradkin will be entitled to an annual benefit equal to the sum of his accruals: (i) under the Traditional Formula for periods of credited service before April 1, 2012; and (ii) under the amended PEP Formula for his period of credited service after March 31, 2012.

Under the PEP Formula, participants currently earn a 4% pension credit for each of their first ten credited years of service, increasing by one percentage point for the eleventh year of service and every fifth year thereafter until they have completed thirty-five years of service (after which no additional pension credit is earned). A participant's PEP Formula lump sum amount is equal to the sum of his or her pension credits multiplied by the average of the participant's highest sixty consecutive calendar months of eligible pay. A participant's annual benefit under the PEP Formula is equal to a single life annuity commencing at age 65 that is the actuarial equivalent of his or her PEP Formula lump sum amount. The single life annuity is calculated using interest rate and mortality assumptions specified in the Pension Plan.

Although the April 1, 2012 changes made to the Pension Plan are anticipated to moderate any future pension value increases, the present value of benefits under the Traditional Formula is sensitive to changes in interest rates. For financial reporting purposes, the applicable discount rate used with respect to the Pension Plan decreased from 3.37% at December 31, 2019, to 2.75% at December 31, 2020, and the applicable discount rate used with respect to the Supplemental Pension Plan decreased from 3.37% at December 31, 2019, to 2.45% at December 31, 2020, resulting in an increase in the present value of benefits under the Traditional Formula for Mr. Fradkin.

Benefit Formula—Supplemental Pension Plan

Benefits under the Supplemental Pension Plan are equal to benefits calculated under the Pension Plan without regard to Internal Revenue Code limits and including amounts deferred under the Northern Trust Corporation Deferred Compensation Plan (the "Deferred Compensation Plan") in eligible pay minus benefits calculated pursuant to the terms of the Pension Plan.

Eligible Pay

For purposes of the Traditional Formula "eligible pay" means base salary (including any before-tax payroll deductions), shift differentials, overtime and certain types of performance-based incentive compensation, including cash, Northern Performance Incentives under the Northern Partners Incentive Plan ("NPIP"), compensation under the Management Performance Plan, payments from the former Annual Performance Plan and the cash value of certain stock options. Cash incentives deferred under the Deferred Compensation Plan are not included in eligible pay under the Pension Plan but are included in eligible pay under the Supplemental Pension Plan.

Prior to April 1, 2012, eligible pay was defined the same for the PEP Formula as for the Traditional Formula, except that eligible pay under the PEP Formula also included cash sales and technical incentives under the NPIP up to 50% of the participant's prior year's base pay. Effective April 1, 2012, eligible pay under the PEP Formula includes all cash incentives under the NPIP.

Retirement

A participant is generally eligible for a normal retirement benefit if he or she terminates employment at or after age 65 and has completed at least five years of vesting service. A participant is eligible for an early retirement benefit if he or she terminates employment at or after age 55 and has completed fifteen years of credited service. Mr. Fradkin is eligible for early retirement benefits. A "vested terminee" benefit is available to a participant who terminates employment with three years of vesting service but prior to becoming eligible for a normal or early retirement benefit.

Under the Traditional Formula, the early retirement benefit is equal to the normal retirement benefit described above, reduced by 0.5% for each month that payments are received prior to age 62, up to 84 months, then actuarially reduced for each month that payments are received prior to age 55. Participants eligible for a "vested terminee" benefit are entitled to benefit payments that are reduced by 0.5% for each month up to 120 months that payments are received prior to age 65, then actuarially reduced for each month that payments are received prior to age 55.

Under the PEP Formula, both the early retirement benefit and "vested terminee" benefit are equal to the normal retirement benefit (in the form of a monthly single life annuity as described above), adjusted for early commencement prior to age 65. The adjustment is made using interest rate and mortality assumptions specified in the Pension Plan.

Form of Benefit Payment

The normal form of benefit payment under the Pension Plan is (i) a single life annuity in the case of an unmarried participant or (ii) a 50% joint and survivor annuity in the case of a married participant. Optional forms of payment include a lump sum option, a 75% joint and survivor annuity, and under limited circumstances, a 100% joint and survivor annuity or level income option annuity. The normal form of benefit under the Supplemental Pension Plan is (i) a five-year certain annuity, payable to the participant in five annual installments, credited with interest pursuant to a formula set forth in the Supplemental Pension Plan or (ii) a single lump sum if the value of the Supplemental Pension Plan benefit is $125,000 or less.

Assumptions

The assumptions used in calculating the present value of the accumulated benefit are set forth in “Note 23—Employee Benefits” to the consolidated financial statements included in Item 8 of the Corporation’s Annual Report on Form 10-K for the year ended December 31, 2020. The Corporation does not grant extra years of credited service under the Pension Plan, other than as noted below under “Potential Payments Upon Termination of Employment or a Change in Control of the Corporation.”

Nonqualified Deferred Compensation

Name	Form of Deferred Compensation	Executive Contributions in Last FY ($)(1)	Registrant Contributions in Last FY ($)(2)	Aggregate Earnings in Last FY ($)(3)	Aggregate Balance at Last FYE ($)(4)
Mr. O’Grady	Deferred Compensation Plan	$ —	$ —	$ —	$ —
	Supplemental TIP	39,900	19,950	40,964	425,180
	Deferred Stock Units	—	—	—	—
Mr. Tyler	Deferred Compensation Plan	—	—	—	—
	Supplemental TIP	12,900	6,450	186	84,876
	Deferred Stock Units	—	—	—	—
Mr. Cherecwich	Deferred Compensation Plan	—	—	—	—
	Supplemental TIP	20,400	10,200	68,352	460,123
	Deferred Stock Units	—	—	—	—
Mr. Fradkin	Deferred Compensation Plan	—	—	37,114	227,070
	Supplemental TIP	20,400	10,200	251,279	1,574,174
	Deferred Stock Units	—	—	(247,420)	1,759,135
Mr. Thomas	Deferred Compensation Plan	—	—	—	—
	Supplemental TIP	—	—	—	—
	Deferred Stock Units	—	—	—	—

(1) Amounts in this column also are included in each named executive officer’s compensation reported in the “Summary Compensation Table,” as “Salary.”

(2) Amounts in this column also are included in each named executive officer’s “All Other Compensation” in the “Summary Compensation Table.”

(3) The aggregate earnings in this column are not “above-market” and therefore are not included in the “Summary Compensation Table.”

(4) All amounts in this column have previously been included in each named executive officer’s compensation reported in the “Summary Compensation Table” to the extent that compensation data for each such officer, generally, has been included in such table.

Deferred Compensation Plan

The Corporation provides certain highly compensated employees, including the named executive officers, the opportunity to defer up to 100% of their short-term incentive awards that would otherwise be payable in a specified calendar year into the Deferred Compensation Plan. Deferred amounts represent general unsecured obligations of the Corporation. The Corporation has established a grantor trust (referred to as a “rabbi” trust), under which the assets of the Deferred Compensation Plan are held and invested. The Corporation does not provide any matching contributions or guaranteed rates of return with respect to deferred amounts. Earnings credited with respect to amounts deferred under the Deferred Compensation Plan are based on the performance of a variety of investment alternatives made available under the plan and selected by the participant. Participants are fully vested in the amounts they defer at all times.

Each participant makes an annual irrevocable election, prior to the beginning of each performance year, regarding his or her deferral and distribution elections. Participants are required to make a retirement (normal, early or postponed retirement as defined in the Pension Plan) basis distribution election of a lump sum or five- or ten-year installments. Participants have the option of making an alternative short-term deferral election of at least three calendar years following the year the award would otherwise have been paid, to be distributed in a lump sum. If the participant’s employment ends for any reason prior to his or her early retirement date and the short-term deferral distribution date, the participant's account balance will be distributed within 60 days of the participant's employment termination date. Special rules apply with respect to distributions in connection with the death of a participant. If the participant is deemed to be a "key employee," as defined by the Internal Revenue Code, any post-December 31, 2004 deferrals payable due to separation from service will be delayed for six months following the date of the separation.

Supplemental TIP

Supplemental TIP is a nonqualified defined contribution retirement plan that provides the portion of an employee's benefit that cannot be paid under TIP due to the Internal Revenue Code's limit on the amount of a participant's compensation that can be taken into account in determining TIP benefits. Account information provided for Supplemental TIP also includes account balances in the Northern Trust Corporation Supplemental Employee Stock Ownership Plan, which was frozen effective January 1, 2005.

Eligibility and Vesting

An employee is eligible to participate in Supplemental TIP for any calendar year if he or she participates in TIP and as of the prior November 30 his or her base salary exceeded the Internal Revenue Code compensation limit. U.S. employees are eligible to participate in TIP and elect salary deferrals immediately upon their hire, and are eligible for employer matching contributions beginning the first day of the month following the completion of six months of vesting service. Each participant generally vests in the employer contributions under TIP and Supplemental TIP on a graduated basis of 20% per year over five years and is fully vested after completing five years of vesting service. Messrs. O'Grady, Tyler, Cherecwich and Fradkin participated in both plans in 2020 and are fully vested in their TIP and Supplemental TIP accounts.

Contributions

Each participant must make an election prior to the beginning of a calendar year to contribute to Supplemental TIP a portion of his or her base salary that exceeds the Internal Revenue Code compensation limit. The Corporation makes a matching contribution under Supplemental TIP using the formula in TIP, which is 50% of the first 6% of deferred salary, for a maximum matching contribution of 3% of salary.

Investments

Each participant's Supplemental TIP account is credited with earnings or losses based on various mutual fund investment alternatives made available under Supplemental TIP (which are generally similar to the investment alternatives available to participants under TIP), selected by the participant, and can be changed on a daily basis.

Distributions

No withdrawal or borrowing of Supplemental TIP assets is permitted during a participant's employment. Distribution of the entire Supplemental TIP account balance generally is made to a participant within ninety days after the participant's termination of employment. If the participant is deemed to be a "key employee," as defined by the Internal Revenue Code, the portion of his or her Supplemental TIP account accruing after December 31, 2004 is distributed as a single lump sum following the six-month anniversary of the termination of employment.

Deferred Stock Units

Certain restricted stock units granted prior to 2010 were required to be deferred until the earlier of: (i) the year in which the Compensation and Benefits Committee reasonably anticipates that, if the payment is made during that year, the deduction of the payment will not be barred by former Internal Revenue Code Section 162(m); or (ii) the period beginning with the date of the participant's separation from service (as defined in the Corporation's Amended and Restated 2002 Stock Plan) and ending on the later of the last day of the Corporation's taxable year in which the participant incurs a separation from service or the fifteenth day of the third month following such separation from service. "Aggregate Earnings in Last FY" in the Nonqualified Deferred Compensation table represent the change in the value of deferred stock units, which is based on the change in the value of the underlying shares of common stock into which the stock units convert.

Potential Payments Upon Termination of Employment or a Change in Control of the Corporation

In addition to benefits to which the Corporation's employees would be entitled upon a termination of employment generally, the Corporation provides certain additional benefits to eligible employees upon certain types of termination of employment, including a termination of employment involving a change in control of the Corporation. Described below are the benefits that the named executive officers would receive upon certain types of termination of employment, upon a change in control of the Corporation and upon a termination following a change in control of the Corporation.

Equity Compensation Plans and Agreements

As described above under "Description of Certain Awards Granted in 2020" beginning on page 52, the Corporation's equity compensation plans and agreements provide enhanced benefits to named executive officers upon a termination of employment with the Corporation or a subsidiary due to death, disability, or retirement (when such termination is not a termination described in the Change in Control Plan as discussed below).

In the case of a termination of a named executive officer's employment due to death, disability or severance, stock options previously granted under equity compensation plans will accelerate. In the case of a termination of a named executive officer's employment due to retirement (after satisfying applicable age and service requirements), stock options previously granted under equity compensation plans will continue vesting. In the case of a termination of a named executive officer's employment due to death or disability, equity award agreements for restricted stock units and performance stock units provide for the full vesting of such units. In the case of a termination of a named executive officer's employment due to severance, equity award agreements for restricted stock units and performance stock units granted prior to February 20, 2018 provide for prorated vesting of units, while agreements for awards granted on or after February 20, 2018 provide for continued vesting. In the case of a termination of a named executive officer's employment due to retirement (after satisfying applicable age and service requirements), restricted stock units and performance stock units will continue to vest.

Change in Control Plan

As discussed above under "Severance Benefits and Change in Control Plan" beginning on page 47, each of our named executive officers, is a participant in the Northern Trust Corporation Executive Change in Control Severance Plan, providing participants with certain benefits upon a qualifying termination of employment within two years following a change in control. The Corporation's decision to adopt the Change in Control Plan and the determination of the level of benefits under the plan were exercises in judgment, informed by: (i) the recognition that all named executive officers are employed at-will; (ii) the Corporation's desire to provide the named executive officers with sufficient security to ensure they are not distracted and remain focused on maximizing stockholder value during and after a change in control; (iii) the Corporation's goal of providing executive compensation at levels that are competitive with similar positions to those in its peer group companies; (iv) the nature and scope of the job responsibilities undertaken by the named executive officers; and (v) the terms of other types of compensation paid by the Corporation to the named executive officers. In particular, in setting the terms of the benefits payable to the named executive officers under various termination scenarios, the Compensation and Benefits Committee was guided in large part by a desire to be sufficiently responsive to market forces and the environment in which the Corporation seeks to attract, motivate and retain its named executive officers by providing benefits consistent and competitive with those of the peer group companies with which it competes for top executive talent.

The Change in Control Plan provides benefits upon the occurrence of the following terminations of employment that are in connection with an actual change in control of the Corporation:

- a termination of the executive's employment by the Corporation or a subsidiary without "good reason" that occurs within two years after a change in control of the Corporation; or

- an executive's voluntary termination of employment with the Corporation or a subsidiary for "good reason" that occurs within two years after a change in control of the Corporation.

The benefits provided to a named executive officer upon such a termination of employment would consist of the following:

- A lump sum payment equal to two times (or three times for the CEO) the sum of: (i) the named executive officer's annual salary in effect on the date of employment termination, or if higher, the date of the change in control; and (ii) the average of the named executive officer's awards under the Corporation's cash incentive plans for the last three fiscal years of participation in such plans prior to the date of termination, or, if higher, the date of the change in control.

- A lump sum payment of a prorated portion of the average amounts paid to the named executive officer under the Corporation's cash incentive plans for the last three fiscal years of participation in such plans prior to the date of termination, or, if higher, the date of the change in control, less any amounts paid to the named executive officer under those plans with respect to completed performance periods occurring in the year the named executive officer's employment terminates.

- An amount equal to the monthly welfare premiums for certain welfare benefit plans in which the named executive officer participated as of the change in control and subsequent termination of employment (less the active employee rates for such coverage) multiplied by 24 (or 36 for the CEO).

The foregoing notwithstanding, the Change in Control Plan provides that in the event any payment to a named executive officer is determined to be an “excess parachute payment” (as defined in the Internal Revenue Code), such payment must either be reduced such that no portion thereof is subject to excise tax or, if it would be more favorable to the named executive officer to whom the payment is due on an after-tax basis, the named executive officer must pay the applicable excise tax without any assistance from the Corporation or its affiliates.

Except as otherwise noted, the following table quantifies the additional amounts described above that each named executive officer would receive upon the related triggering event assuming such event took place on December 31, 2020.

		Retirement (1)	Death (1)	Disability (1)	Severance (4)	Change in Control	Termination in connection with a Change in Control
Mr. O’Grady	Stock Options	n/a	$ 51,623	$ 51,623	$ 51,623	$ 51,623	$ 51,623
	Restricted Stock Units	n/a	5,348,668	5,348,668	5,348,668	5,348,668	5,348,668
	Performance Stock Units(2)	n/a	11,559,601	11,559,601	11,559,601	11,559,601	11,559,601
	Cash Severance					—	8,250,000
	Pro-Rata Bonus					—	1,800,000
	Supplemental Pension Plan / TIP					—	—
	Welfare Benefits(3)					—	51,426
	Reduction to Prevent Excise Tax					—	—
	Excise Tax Gross-Up					n/a	n/a
Total		**$ —**	**$16,959,892**	**$16,959,892**	**$16,959,892**	**$16,959,892**	**$27,061,318**
Mr. Tyler	Stock Options	n/a	$ 4,917	$ 4,917	$ 4,917	$ 4,917	$ 4,917
	Restricted Stock Units	n/a	475,004	475,004	475,004	475,004	475,004
	Performance Stock Units(2)	n/a	647,583	647,583	647,583	647,583	647,583
	Cash Severance					—	1,778,000
	Pro-Rata Bonus					—	389,000
	Supplemental Pension Plan / TIP					—	—
	Welfare Benefits(3)					—	34,284
	Reduction to Prevent Excise Tax					—	—
	Excise Tax Gross-Up					n/a	n/a
Total		**$ —**	**$ 1,127,504**	**$ 1,127,504**	**$ 1,127,504**	**$ 1,127,504**	**$ 3,328,788**
Mr. Cherecwich	Stock Options	$ 33,188	$ 33,188	$ 33,188	$ 33,188	$ 33,188	$ 33,188
	Restricted Stock Units	2,148,110	2,148,110	2,148,110	2,148,110	2,148,110	2,148,110
	Performance Stock Units(2)	4,682,163	4,682,163	4,682,163	4,682,163	4,682,163	4,682,163
	Cash Severance					—	3,290,000
	Pro-Rata Bonus					—	1,020,000
	Supplemental Pension Plan / TIP					—	—
	Welfare Benefits(3)					—	34,284
	Reduction to Prevent Excise Tax					—	—
	Excise Tax Gross-Up					n/a	n/a
Total		**$6,863,461**	**$ 6,863,461**	**$ 6,863,461**	**$ 6,863,461**	**$ 6,863,461**	**$11,207,745**
Mr. Fradkin	Stock Options	$ 35,397	$ 35,397	$ 35,397	$ 35,397	$ 35,397	$ 35,397
	Restricted Stock Units	2,246,361	2,246,361	2,246,361	2,246,361	2,246,361	2,246,361
	Performance Stock Units(2)	4,879,674	4,879,674	4,879,674	4,879,674	4,879,674	4,879,674
	Cash Severance					—	3,483,333
	Pro-Rata Bonus					—	1,116,667
	Supplemental Pension Plan / TIP					—	—
	Welfare Benefits(3)					—	33,640
	Reduction to Prevent Excise Tax					—	—
	Excise Tax Gross-Up					n/a	n/a
Total		**$7,161,432**	**$ 7,161,432**	**$ 7,161,432**	**$ 7,161,432**	**$ 7,161,432**	**$11,795,072**
Mr. Thomas	Stock Options	n/a	$ 9,830	$ 9,830	$ 9,830	$ 9,830	$ 9,830
	Restricted Stock Units	n/a	1,654,191	1,654,191	1,654,191	1,654,191	1,654,191
	Performance Stock Units(2)	n/a	3,673,947	3,673,947	3,673,947	3,673,947	3,673,947
	Cash Severance					—	2,783,333
	Pro-Rata Bonus					—	766,667
	Supplemental Pension Plan / TIP					—	—
	Welfare Benefits(3)					—	34,284
	Reduction to Prevent Excise Tax					—	—
	Excise Tax Gross-Up					n/a	n/a
Total		**$ —**	**$ 5,337,968**	**$ 5,337,968**	**$ 5,337,968**	**$ 5,337,968**	**$ 8,922,252**

Note: The value of each equity award included in this table is based on a price of $93.14 per share (the closing market price of the Corporation's common stock on December 31, 2020).

(1) Upon retirement, death or disability each named executive officer remains eligible to receive a termination year bonus under the Management Performance Plan at the discretion of the Compensation and Benefits Committee.

(2) Performance stock unit award values are based upon the target number of shares underlying 2018, 2019 and 2020 awards outstanding as of December 31, 2020.

(3) The value of this continued benefit coverage is derived by multiplying the Corporation's annual cost of providing such coverage in 2020 by the applicable severance multiple.

(4) All named executive officers are entitled to a twelve-month enhancement to pro-rata severance calculations for restricted stock units granted in 2017.

CEO Pay Ratio

The table below sets forth an estimate of the ratio of the annual total compensation of our CEO to the median of the annual total compensation of all of our employees, other than the CEO, for the year ended December 31, 2020.

Annual total compensation of the CEO for 2020	$9,189,814
Annual total compensation of the median employee for 2020	$ 68,055
Ratio of annual total compensation of the CEO to the annual total compensation of the median employee for 2020	135:1

Our median employee was identified as of October 1, 2020, using the total cash compensation paid to all full-time, part-time, seasonal, and temporary employees in all jurisdictions for the nine-month period ended September 30, 2020. The compensation of full-time employees hired in 2020 and of those for whom pay was reduced due to a voluntary leave of absence was annualized as permitted under the rules of the SEC. We did not use any other material assumptions, adjustments, or estimates in identifying the median employee. After identifying the median employee as described above, we calculated the annual total compensation of such employee using the same methodology used to calculate the compensation of our named executive officers in the Summary Compensation Table on page 50.

DIRECTOR COMPENSATION

The Compensation and Benefits Committee is responsible for reviewing non-employee director compensation and making a recommendation with respect thereto to the Board. In doing so, the Committee works with its independent compensation consultant to periodically review non-employee director compensation data for the same peer group utilized by the Committee to inform its decision-making with respect to executive compensation and has access to such other resources as it deems appropriate. Under the current plan design, non-employee directors are compensated for their services with cash compensation and equity awards in the form of restricted stock units. Directors who are employees of the Corporation receive no additional compensation for serving on the Board or on any Board committee.

Annual Retainer and Other Fees

The following table describes the components of non-employee director compensation in 2020. All components other than the annual restricted stock unit grant are paid in cash.

Compensation Component	2020 Amount
Annual Restricted Stock Unit Grant	$125,000
Annual Cash Retainer	110,000
Annual Lead Director Retainer	42,500
Annual Committee Chair Retainer	20,000
Annual Committee Retainer (members of the Audit Committee, Business Risk Committee, and/or Capital Governance Committee, including Chair)	10,000

Annual restricted stock units were granted to non-employee directors in April 2020 and will vest on April 20, 2021, the date of the 2021 Annual Meeting of Stockholders. Directors' stock units do not have voting rights and dividend equivalents thereon are subject to the same vesting, forfeiture and distribution provisions as the underlying stock units. Each stock unit entitles a director to one share of common stock at vesting, unless a director elects to defer receipt of the shares.

Effective January 19, 2021, non-employee directors of the Corporation serving as the Chair of any subcommittee of a Board committee are entitled to an additional $10,000 annually, and any directors, including the applicable Chair, serving on the Cybersecurity Risk Oversight Subcommittee are entitled to an additional $10,000 annually.

Deferral of Compensation

Non-employee directors may elect to defer payment of their cash compensation and stock units until termination of their service as directors. Any deferred cash compensation is converted into stock units representing shares of common stock. The value of each such stock unit is based upon the price of the stock at the end of the calendar quarter for which the cash compensation would have been paid. Dividends on all stock units deferred prior to January 1, 2018 (including stock units representing deferred cash compensation) are paid quarterly to a cash account and accrue interest at an interest rate determined from time to time by the Compensation and Benefits Committee. Dividends on all stock units deferred on or after January 1, 2018 (including stock units representing deferred cash compensation) are converted into additional stock units representing shares of common stock based upon the closing price of the stock on the day such dividend would have been paid. For compensation deferred prior to January 1, 2018, the value of stock units representing deferred cash compensation, as well as all dividends on stock units representing deferred compensation of any form, will be paid out in cash, and stock units representing deferred stock unit compensation will be distributed in stock, in each case in a lump sum or in up to ten annual installments at the election of the director. For compensation deferred on or after January 1, 2018, the value of all stock units (including stock units representing deferred cash compensation, as well as all dividends on stock units representing deferred compensation of any form) will be distributed in stock in a lump sum or in up to ten annual installments at the election of the director.

Other Director Compensation

Directors were eligible to participate in the Corporation's matching gift program, under which the Corporation matched gifts made by employees and directors to eligible nonprofit organizations, on the same terms as employees through the date of the program's discontinuation on March 31, 2020. The maximum gift total for a non-employee director participant in the program was $2,000 in any calendar year.

Stock Ownership Guidelines

By the fifth anniversary of election to the Board, non-employee directors are required to hold shares of the Corporation's common stock equal to five times the annual cash retainer provided to directors. If the minimum requirement is not met upon or at any time after such date, he or she is expected to retain 100% of the net, after-tax shares received upon vesting of equity awards or exercises of stock options until the minimum is met.

As of December 31, 2020, all non-employee directors met or exceeded the stock ownership guidelines to which they were subject, except for Ms. Klevorn and Mr. Mehta, who are expected to reach the minimum share ownership threshold within their transition periods ending on January 22, 2024.

Director Compensation Table

The following table sets forth all compensation earned by each non-employee director of the Corporation in 2020.

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($)(1)	All Other Compensation ($)	Total ($)
Linda Walker Bynoe	$130,000	$124,968	$ —	$254,968
Susan Crown	120,000	124,968	2,000(2)	246,968
Dean M. Harrison	150,000	124,968	—	274,968
Jay L. Henderson	172,500	124,968	—	297,468
Marcy S. Klevorn	130,000	124,968	—	254,968
Siddharth N. “Bobby” Mehta	130,000	124,968	—	254,968
Jose Luis Prado	110,000	124,968	—	234,968
Thomas E. Richards	133,901	124,968	—	258,869
Martin P. Slark	110,000	124,968	—	234,968
David H. B. Smith, Jr.	150,000	124,968	—	274,968
Donald Thompson	150,000	124,968	—	274,968
Charles A. Tribbett III	121,099	124,968	—	246,067

(1) This column shows the grant date fair value of the stock awards for all non-employee directors in 2020, computed in accordance with FASB ASC Topic 718. See “Note 24—Share-Based Compensation Plans” to the consolidated financial statements included in Item 8 of the Corporation's Annual Report on Form 10-K for the year ended December 31, 2020 for a discussion of the assumptions made by the Corporation in the valuation of these stock unit awards. As of December 31, 2020, each non-employee director serving on such date held 1,679 unvested stock units, which represents the stock unit award made by the Corporation in April 2020 described above.

(2) Reflects a charitable donation made in the name of Ms. Crown pursuant to the Corporation's former matching gift program. The matching gift program was available to directors on the same terms as it was available to all employees through the date of the program's discontinuation on March 31, 2020, with a maximum gift total of $2,000 in any calendar year.

EQUITY COMPENSATION PLAN INFORMATION

Set forth below is information with respect to equity compensation plans under which the common stock of the Corporation was authorized for issuance as of December 31, 2020.

Plan Category	Number of Securities to Be Issued upon Exercise of Outstanding Options, Warrants, and Rights (#)	Weighted-Average Exercise Price of Outstanding Options, Warrants, and Rights ($)	Number of Securities Remaining Available for Issuance under Equity Compensation Plans (Excluding Securities Reflected in the Second Column) (#)
Equity compensation plans approved by stockholders	4,281,151(1)	$66.87(2)	17,168,019(3)
Equity compensation plans not approved by stockholders	N/A	N/A	N/A
Total	**4,281,151**	**$66.87(2)**	**17,168,019**

(1) Includes shares of common stock underlying outstanding or deferred restricted stock unit, performance stock unit and stock option awards.

(2) Restricted stock units and performance stock units are excluded when determining the weighted-average exercise price.

(3) All shares are available for issuance under the Corporation's 2017 Long-Term Incentive Plan.

AUDIT COMMITTEE REPORT

The Audit Committee is responsible for providing oversight of the Corporation's financial reporting functions and internal control over financial reporting. The Audit Committee's function is one of oversight, recognizing that: (i) management is responsible for the complete and accurate preparation of the Corporation's consolidated financial statements, including internal control over financial reporting; and (ii) KPMG LLP, the Corporation's independent registered public accounting firm, is responsible for performing an audit on such consolidated financial statements and expressing an opinion as to whether they are free of material misstatement and presented in accordance with U.S. generally accepted accounting principles. KPMG LLP is also responsible for expressing an opinion as to whether the Corporation maintained effective internal control over financial reporting.

Consistent with its oversight responsibilities, the Audit Committee has reviewed and discussed with management and KPMG LLP the Corporation's audited consolidated financial statements as of and for the year ended December 31, 2020. The Audit Committee has also discussed with KPMG LLP the firm's assessment of the Corporation's internal controls and the matters required to be discussed by Public Company Accounting Oversight Board Auditing Standards No. 1301, "*Communications with Audit Committees*." The Audit Committee has also received and discussed the written disclosures and the letter from KPMG LLP required by Public Company Accounting Oversight Board Rule 3526, "*Communication with Audit Committees Concerning Independence*" and has conducted a discussion with KPMG LLP regarding its independence. The Audit Committee also considered whether the provision of non-audit services by KPMG LLP to the Corporation for the fiscal year ended December 31, 2020 is compatible with maintaining KPMG LLP's independence.

Based on the above-mentioned reviews and discussions, and subject to the limitations on the role and responsibilities of the Audit Committee referred to above, the Audit Committee recommended to the Board that the Corporation's audited consolidated financial statements be included in its Annual Report on Form 10-K for the year ended December 31, 2020 for filing with the SEC.

Audit Committee

David H. B. Smith, Jr. (Chair)
Dean M. Harrison
Jay L. Henderson
Marcy S. Klevorn
Donald Thompson

AUDIT MATTERS

Fees of Independent Registered Public Accounting Firm

Description of Fees	2020	2019
Audit Fees	$5,140,808	$ 5,969,563
Audit-Related Fees	3,533,558	3,700,010
Tax Fees	859,224	721,147
All Other Fees	60,918	55,840
Total	**$9,594,508**	**$10,446,560**

Audit Fees include fees for professional services rendered for the annual integrated audit of the Corporation's consolidated financial statements for the fiscal year (including services relating to the audit of internal control over financial reporting), audits of subsidiary financial statements, reviews of the financial statements included in the Corporation's Quarterly Reports on Form 10-Q and comfort letters.

Audit-Related Fees include fees for services that were reasonably related to performance of the audit of the annual consolidated financial statements for the fiscal year, other than Audit Fees, such as employee benefit plan audits, internal control reviews, service organization control reports and other attestation services.

Tax Fees include fees for tax return preparation, tax compliance and tax advice.

All Other Fees include fees for all services other than Audit Fees, Audit-Related Fees and Tax Fees, including various advisory and regulatory services.

Pre-Approval Policies and Procedures of the Audit Committee

The Audit Committee has in place a policy regarding the engagement of independent public accounting firms to provide auditor services to the Corporation. The purpose of the policy is to establish procedures for Audit Committee pre-approval of all auditor services to be provided to the Corporation by its independent registered public accounting firm. Auditor services include audit services, audit-related services and non-audit services, including tax services. The policy provides that the Audit Committee, the Chairman or any Audit Committee member delegated the authority (a "Designated Member") has the authority to grant pre-approvals of auditor services. In addition, the policy provides that the independent registered public accounting firm may be engaged to provide only those non-audit services: (i) that are permitted by SEC rules; and (ii) that, in the judgment of the Audit Committee, maintain the independent registered public accounting firm's independence from the Corporation. In evaluating whether a proposed engagement of the Corporation's independent registered public accounting firm for a specific permitted non-audit service maintains the firm's independence from the Corporation, the Audit Committee or a Designated Member thereof must consider whether the proposed engagement would cause the independent registered public accounting firm to: (a) audit its own work; (b) perform management functions; or (c) act as an advocate for the Corporation. The independent registered public accounting firm shall in no event be engaged to perform any prohibited services, as set forth in the policy.

All audit, audit-related, tax and other services provided by KPMG LLP in 2020 were pre-approved in accordance with the Audit Committee's policy regarding the engagement of independent public accounting firms to provide auditor services to the Corporation.

ITEM 3—RATIFICATION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The independent registered public accounting firm is appointed annually by the Corporation's Audit Committee. For the year ending December 31, 2021, the Audit Committee has authorized the engagement of KPMG LLP as the Corporation's independent registered public accounting firm. KPMG LLP served as the Corporation's independent registered public accounting firm for the fiscal year ended December 31, 2020. Representatives of KPMG LLP are expected to be present at the Annual Meeting. They will have an opportunity to make a statement if they wish and will be available to respond to appropriate questions.

Stockholder ratification of the selection of KPMG LLP as the Corporation's independent registered public accounting firm is not required. However, the Board is submitting the selection of KPMG LLP as the Corporation's independent registered public accounting firm to the stockholders for ratification because it believes it is a governance best practice to do so. If the stockholders fail to ratify KPMG LLP as the independent registered public accounting firm, the Audit Committee will reassess its appointment, but in such event it may elect to retain KPMG LLP nonetheless. Further, even if the selection is ratified, the Audit Committee in its discretion may direct the appointment of a different independent registered public accounting firm at any time during the year if it determines that such change would be in the best interests of the Corporation and its stockholders.

The Board unanimously recommends that you vote FOR the ratification of KPMG LLP as the Corporation's independent registered public accounting firm for the fiscal year ending December 31, 2021.

STOCKHOLDER PROPOSALS FOR 2022 ANNUAL MEETING

Any stockholder proposals for the Corporation's 2022 Annual Meeting of Stockholders (other than proxy access nominations) must be received by the Corporation, directed to the attention of the Corporation's Corporate Secretary, no later than November 9, 2021 in order to be eligible for inclusion in the Corporation's proxy statement and form of proxy for that meeting. Director nominations for inclusion in the Corporation's proxy statement and form of proxy for the 2022 Annual Meeting of Stockholders pursuant to the proxy access provision in the Corporation's By-laws must be received by the Corporation's Corporate Secretary no earlier than October 10, 2021 and no later than November 9, 2021. All proposals and director nominations submitted by stockholders must comply in all respects with the rules and regulations of the SEC and the Corporation's By-laws.

Under the Corporation's By-laws other proposals that are not eligible for inclusion in the proxy statement will be considered timely and may be eligible for presentation at the 2022 Annual Meeting of Stockholders if they are received by the Corporation in the form of a written notice, directed to the attention of the Corporation's Corporate Secretary, no earlier than November 21, 2021 and no later than December 21, 2021. If the 2022 Annual Meeting of Stockholders is called for a date that is not within thirty days before or after the anniversary date of this Annual Meeting, notice by the stockholder in order to be timely must be received within ten days after notice of the 2022 Annual Meeting is mailed or public disclosure of the date of the Annual Meeting is made, whichever occurs first. The notice must contain the information required by the Corporation's By-laws.

SECURITY OWNERSHIP BY DIRECTORS AND EXECUTIVE OFFICERS

The following table shows the beneficial ownership of the Corporation's common stock as of December 31, 2020 for each director, each named executive officer and all directors and executive officers of the Corporation as a group.

Name of Beneficial Owner	Shares (1)(2)	Shares under Exercisable Options (3)	Total Beneficial Ownership of Common Stock	Percent of Class
Non-Employee Directors:				
Linda Walker Bynoe	23,818	—	23,818	*
Susan Crown	44,419	—	44,419	*
Dean M. Harrison	12,968	—	12,968	*
Jay L. Henderson	8,553	—	8,553	*
Marcy S. Klevorn	1,463	—	1,463	*
Siddharth N. "Bobby" Mehta	1,386	—	1,386	*
Jose L. Prado	16,018	—	16,018	*
Thomas E. Richards	10,507	—	10,507	*
Martin P. Slark	14,911	—	14,911	*
David H. B. Smith, Jr.(4)	40,661	—	40,661	*
Donald Thompson	11,855	—	11,855	*
Charles A. Tribbett III	26,979	—	26,979	*
Named Executive Officers:				
Michael G. O'Grady	139,194	296,807	436,001	*
Jason J. Tyler	9,720	24,669	34,389	*
Peter B. Cherecwich	45,410	26,132	71,542	*
Steven L. Fradkin	202,946	98,427	301,373	*
Shundrawn A. Thomas	30,800	20,232	51,032	*
All directors and executive officers as a group (24 persons)	826,325	603,576	1,429,901	*

* Less than 1%.

(1) Except as noted below, the nature of beneficial ownership for shares shown in this table is sole voting and investment power (including shares as to which spouses and minor children of the individuals covered by this table have such power).

(2) Amount includes restricted stock units payable on a one-for-one basis in shares of the Corporation's common stock that are scheduled to vest within sixty days of December 31, 2020 in the following amounts: Mr. O'Grady – 20,203 units; Mr. Tyler – 1,795 units; Mr. Cherecwich – 8,899 units; Mr. Fradkin – 9,338 units; Mr. Thomas – 5,888 units; and all directors and officers as a group – 82,306 units.

(3) Amount includes options that were exercisable as of December 31, 2020 and options that become exercisable within sixty days thereafter.

(4) Amount includes 1,704 shares held in a trust over which Mr. Smith shares voting and investment power with one other individual. Amount excludes 2,546,460 shares held in certain trusts over which Mr. Smith directly or indirectly shares voting and investment power with two or more other individuals. Mr. Smith is the beneficiary of a trust holding 1,342,080 of such excluded shares.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS

The following table includes information concerning stockholders who were the beneficial owners of more than 5% of the outstanding shares of the Corporation's common stock as of December 31, 2020.

Name and Address	Shares	Percent of Class
The Vanguard Group, Inc.(1) 100 Vanguard Boulevard Malvern, Pennsylvania 19355	21,703,384	10.4%
BlackRock, Inc.(2) 55 East 52nd Street New York, New York 10055	13,952,267	6.7%

(1) As reported on a Schedule 13G/A filed on February 10, 2021, of the shares reported, The Vanguard Group, Inc. ("Vanguard") did not have sole voting power with respect to any shares reported, and had shared voting power with respect to 326,095 shares, or 0.2% of the outstanding common stock. Vanguard had sole investment power with respect to 20,810,912 shares, or 10.0% of the outstanding common stock, and shared investment power with respect to 829,472 shares, or 0.4% of the outstanding common stock.

(2) As reported on a Schedule 13G/A filed on January 29, 2021, of the shares reported, BlackRock, Inc. ("BlackRock") had sole voting power with respect to 12,069,913 shares, or 5.8% of the outstanding common stock, and it did not have shared voting power with respect to any shares reported. BlackRock had sole investment power with respect to all shares reported.

GENERAL INFORMATION ABOUT THE ANNUAL MEETING

When and where is the Annual Meeting?

The Annual Meeting will be held on April 20, 2021 at 10:30 a.m., Central Time.

To support the health and well-being of our various stakeholders in light of ongoing public health concerns regarding the COVID-19 pandemic, we have determined that the Annual Meeting will be held in a virtual meeting format only, via the Internet at **www.virtualshareholdermeeting.com/NTRS2021**. Access to the virtual meeting platform will begin at 10:15 a.m., Central Time, and we encourage you to access the virtual meeting platform prior to the start time. For those unable to attend the virtual Annual Meeting, a recorded version will be made available on our website.

Who can attend the Annual Meeting?

Stockholders at the close of business on the record date, February 22, 2021, or their duly appointed proxies, may participate, vote and submit questions at our Annual Meeting. To do so, you must enter the control number found on your Notice Regarding the Availability of Proxy Materials (the "Notice"), proxy card or voting instruction form at **www.virtualshareholdermeeting.com/NTRS2021**. If you are not a stockholder or do not have a control number, you may still access the meeting as a guest, but you will not be able to participate.

Stockholders will have substantially the same opportunities to participate in our virtual Annual Meeting as they would have in an in-person meeting. Questions that comply with the Annual Meeting's rules of conduct and that are pertinent to the purpose of the Annual Meeting will be answered during the meeting, subject to time constraints. We may address substantially similar questions, or questions that relate to the same topic, in a single response. If you have a question of personal interest that is not of general concern to all stockholders, or if a question posed at the Annual Meeting was not otherwise answered, we encourage you to contact us separately after the Annual Meeting by visiting www.northerntrust.com/contact-us-corporate-overview.

What if I am having technical difficulties or want additional information?

If you are experiencing technical difficulties accessing the virtual Annual Meeting, you may call the technical support numbers posted on the log-in page of the virtual meeting platform. For additional stockholder support or if you have any other questions, please contact us by visiting www.northerntrust.com/contact-us-corporate-overview.

Who can vote at the Annual Meeting?

Record holders of the Corporation's common stock at the close of business on February 22, 2021 may vote at the Annual Meeting. On such date, the Corporation had 207,917,100 shares of common stock outstanding.

You are entitled to one vote for each share of common stock that you owned of record at the close of business on February 22, 2021. The proxy card or Notice, as applicable, indicates the number of shares you are entitled to vote at the Annual Meeting.

How do I vote?

Whether or not you plan to attend the Annual Meeting, we urge you to vote your shares promptly.

If you are a "stockholder of record" (that is, you hold your shares of the Corporation's common stock in your own name), you may vote your shares by proxy using any of the following methods:

- using the Internet site listed on the Notice or the proxy card;
- calling the toll-free telephone number listed on the proxy card; or
- completing, signing, dating and returning your proxy card.

The Internet and telephone voting procedures set forth on the Notice and the proxy card are designed to authenticate stockholders' identities, to allow stockholders to provide their voting instructions and to confirm that their instructions have been properly recorded. If you vote by Internet or telephone, you should not return your proxy card.

What if I am a "beneficial owner"?

If you are a "beneficial owner," also known as a "street name" holder (that is, you hold your shares of the Corporation's common stock through a broker, bank or other nominee), you will receive from the record holder, in the form of a Notice or otherwise, voting instructions (including instructions, if any, on how to vote by Internet or telephone) that you must follow in order to have your shares voted at the Annual Meeting. Under the rules of various national and regional securities exchanges, brokers, banks and other nominees that hold securities on behalf of beneficial owners generally may vote on routine matters even if they have not received voting instructions from the beneficial owners for whom they hold securities, but are not permitted to vote on nonroutine matters unless they have received such voting instructions. While the ratification of the appointment of the Corporation's independent registered public accounting firm is considered to be a routine matter, each of the other matters to be presented to the stockholders at the Annual Meeting described in this Proxy Statement is considered to be a nonroutine matter. **Therefore, if you fail to provide your specific voting instructions, your broker may only vote your shares on the ratification of the appointment of the Corporation's independent registered public accounting firm.** Consequently, it is important that you communicate your voting instructions by using any of the following methods so your vote can be counted:

- using the Internet site listed on the voting instruction form;
- calling the toll-free telephone number listed on the voting instruction form; or
- completing, signing, dating and returning your voting instruction form.

What if I own my shares through TIP?

If you own shares of common stock as a participant in TIP your proxy card will cover the shares credited to your plan account. The completed proxy card (or vote by Internet or telephone) will serve as your voting instructions to the TIP trustee. To allow sufficient time for voting by the trustee, your voting instructions must be received by 11:59 p.m., Eastern Time, on April 15, 2021.

What if I return my proxy card without specifying my voting choices?

Whether you vote by Internet, telephone or mail, your shares will be voted in accordance with your instructions. If you sign, date and return your proxy card without indicating how you want your shares to be voted, the proxy holders will vote your shares in accordance with the following recommendations of the Board:

Item 1 — **FOR** the election of each nominee for director;

Item 2 — **FOR** the approval, by an advisory vote, of the 2020 compensation of the Corporation's named executive officers, as disclosed in this Proxy Statement pursuant to the compensation disclosure rules of the SEC; and

Item 3 — **FOR** the ratification of the appointment of KPMG LLP as the Corporation's independent registered public accounting firm for the fiscal year ending December 31, 2021.

The proxy holders are authorized to vote as they shall determine in their sole discretion on any other business that may properly come before the Annual Meeting.

May I change my vote or revoke my proxy?

You may change or revoke your proxy at any time before it is voted at the Annual Meeting by:

- sending a written notice of revocation to the Corporation's Corporate Secretary;
- submitting another signed proxy card with a later date;
- voting by Internet or telephone at a later date; or
- attending the Annual Meeting and completing and submitting a ballot online during the meeting at **www.virtualshareholdermeeting.com/NTRS2021**.

If you hold your shares in the name of your broker, bank or other nominee and wish to revoke your proxy, you will need to contact that party to revoke your proxy.

What constitutes a quorum?

A quorum of stockholders is necessary to hold the Annual Meeting. A majority of the outstanding shares entitled to vote at the Annual Meeting is required to be present in order to establish a quorum. Abstentions and broker nonvotes, if any, will be counted as present for purposes of establishing a quorum. A “broker nonvote” will occur when a nominee holding shares for a beneficial owner does not vote on a particular proposal because the nominee does not have discretionary voting power with respect to that proposal and has not received instructions from the beneficial owner. As noted above, brokers, banks and other nominees generally cannot vote your shares on any of the matters to be presented to stockholders at the Annual Meeting described in this Proxy Statement, other than the ratification of the appointment of KPMG LLP as the Corporation’s independent registered public accounting firm for the fiscal year ending December 31, 2021, without your specific instructions. **Please return your proxy card or voting instruction form, as applicable, or vote by Internet or telephone so your vote can be counted.** An inspector of election appointed for the Annual Meeting will tabulate all votes cast at the Annual Meeting. In the event a quorum is not present at the Annual Meeting, we expect that the Annual Meeting will be adjourned or postponed to solicit additional proxies. Virtual attendance at our Annual Meeting constitutes presence for purposes of establishing a quorum at the meeting.

What is the required vote to approve each of the proposals?

The following table indicates the vote required for approval of each item to be presented to the stockholders at the Annual Meeting and the effect of abstentions and broker nonvotes.

Item	Required Vote	Effect of Abstentions and Broker Nonvotes
Item 1—Election of directors	Affirmative vote of a majority of the votes cast with respect to each nominee. See below for further detail.	• Abstentions with respect to a nominee will have no effect on the election of such nominee. • Broker nonvotes will have no effect on the voting for this item.
Item 2—Advisory vote on executive compensation	Affirmative vote of a majority of the shares of common stock present and entitled to vote.	• Abstentions will have the effect of a vote AGAINST this item. • Broker nonvotes will have no effect on the voting for this item.
Item 3—Ratification of the independent registered public accounting firm	Affirmative vote of a majority of the shares of common stock present and entitled to vote.	• Abstentions will have the effect of a vote AGAINST this item. • Brokers may vote uninstructed shares on this item.

Pursuant to the Corporation’s By-laws, a nominee for director in an uncontested election (such as this year’s election where the only nominees are those recommended by the Board) must receive the affirmative vote of a majority of the votes cast with respect to his or her election at a meeting of stockholders to be elected. In contested elections, the affirmative vote of a plurality of the votes cast will be required to elect a director. The Corporation’s Corporate Governance Guidelines require an incumbent director who fails to receive the affirmative vote of a majority of the votes cast with respect to his or her election in an uncontested election at a meeting of stockholders to submit his or her resignation following certification of the stockholder vote. Such resignation will first be considered by the members of the Corporate Governance Committee (other than the tendering director, if applicable), who will recommend to the Board whether to accept or reject the resignation after considering all factors deemed relevant by the Committee, including, without limitation, any stated reasons as to why stockholders did not support the director whose resignation has been tendered, the length of service and qualifications of such director, the director’s contributions to the Corporation and the Corporation’s Corporate Governance Guidelines. The Board (other than the tendering director) will then act to accept or reject the Committee’s recommendation no later than ninety days following the date of the stockholders’ meeting after considering the factors considered by the Committee and such additional information and factors as the Board believes to be relevant.

How is the Corporation distributing the proxy materials?

Pursuant to rules adopted by the SEC, for some of our stockholders we are providing access to our proxy materials via the Internet. The rules permit us to send the Notice to stockholders of record and beneficial owners. All stockholders have the ability to access the proxy materials on the website referred to in the Notice, **www.proxyvote.com**, or to request a printed set of proxy materials on this site or by calling toll-free 1-800-579-1639. Complete instructions for accessing the proxy materials on the Internet or requesting a printed copy may be found in the Notice. In addition, stockholders may request to receive all future proxy materials in printed form by mail or electronically by e-mail on the website above or when voting electronically. Choosing to receive your future proxy materials by e-mail will save us the cost of printing and mailing documents to you and will reduce the impact of our annual stockholders' meetings on the environment. If you choose to receive future proxy materials by e-mail, you will receive an e-mail next year with instructions containing a link to those materials and a link to the proxy voting site. Your election to receive proxy materials by e-mail will remain in effect until you terminate it.

What is "householding"?

We are delivering only one Annual Report on Form 10-K and Proxy Statement (or, as applicable, the Notice) to stockholders of record who share the same address unless they have notified us that they wish to continue receiving multiple copies. This practice, known as "householding," reduces duplicate mailings, saves printing and postage costs as well as natural resources and will not affect dividend check mailings. If you wish to receive separate copies of proxy materials, please contact Broadridge at 1-866-540-7095 or Broadridge, Householding Department, 51 Mercedes Way, Edgewood, NY 11717. Stockholders who wish to receive a separate set of proxy materials now should contact Broadridge at the same telephone number or mailing address and the materials will be delivered to you promptly upon your request.

If you and other stockholders of record with whom you share an address currently receive multiple copies of our proxy materials or if you hold our stock in more than one account, and, in either case, you wish to receive only a single copy of such materials in the future, please contact Broadridge at the telephone number or mailing address above with the names in which all accounts are registered and the name of the account for which you wish to receive mailings.

Who is paying the costs of this proxy solicitation?

The Corporation will bear the cost of preparing, printing and mailing the materials in connection with this solicitation of proxies. In addition to mailing these materials, the Corporation's officers and other employees may, without being additionally compensated, solicit proxies personally and by mail, telephone or electronic communication. The Corporation will reimburse banks and brokers for their reasonable out-of-pocket expenses related to forwarding proxy materials to beneficial owners of stock or otherwise in connection with this solicitation. In addition, the Corporation has retained Georgeson Inc. to assist in the solicitation of proxies for a fee of approximately $10,000, plus reasonable out-of-pocket expenses.

Helpful Resources

Where You Can Find More Information

Annual Meeting

Annual Report, Proxy Statement and Updates:
www.northerntrust.com/about-us/investor-relations

Voting Your Proxy via the Internet:
www.proxyvote.com

Board of Directors

www.northerntrust.com/about-us/investor-relations/governance under the "Board Members" heading

Communications with the Board

www.northerntrust.com/about-us/investor-relations/governance under the "Communications with the Board" heading

Governance Documents

www.northerntrust.com/about-us/investor-relations/governance under the following headings:

- By-Laws
- Corporate Governance Guidelines
- Committee and Subcommittee Charters
- Code of Business Conduct and Ethics

Investor Relations

www.northerntrust.com/about-us/investor-relations

Corporate Social Responsibility

Corporate Social Responsibility Report:
www.northerntrust.com/about-us/corporate-social-responsibility/2019-csr-report

Statement on Climate Change and Greenhouse Gas Emissions:
www.northerntrust.com/about-us/corporate-social-responsibility/policy under the "Statement on Climate Change and Greenhouse Gas Emissions" heading

Statement Regarding Government Relations and Political Contributions:
www.northerntrust.com/about-us/corporate-social-responsibility/policy under the "Statement Regarding Government Relations and Political Contributions" heading

Select Definitions and Abbreviations

Bank	The Northern Trust Company
C&IS	Corporate & Institutional Services
CCAR	Comprehensive Capital Analysis and Review
CDFI	Community Development Financial Institution
CEO	Chief Executive Officer
CFO	Chief Financial Officer
Change in Control Plan	Northern Trust Corporation Executive Change in Control Severance Plan
Corporation	Northern Trust Corporation
Deferred Compensation Plan	Northern Trust Corporation Deferred Compensation Plan
Exchange Act	Securities Exchange Act of 1934
Federal Reserve	Board of Governors of the Federal Reserve System
GAAP	Generally accepted accounting principles in the United States
NASDAQ	The NASDAQ Stock Market LLC
NPIP	Northern Partners Incentive Plan
Pension Plan	The Northern Trust Company Pension Plan
PPP	Paycheck Protection Program
ROE	Return on Average Common Equity
SBA	U.S. Small Business Administration
SEC	U.S. Securities and Exchange Commission
Supplemental Pension Plan	Northern Trust Corporation Supplemental Pension Plan
Supplemental TIP	Northern Trust Corporation Supplemental Thrift-Incentive Plan
TIP	The Northern Trust Company Thrift-Incentive Plan

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NORTHERN TRUST CORPORATION
50 SOUTH LASALLE STREET
CHICAGO, IL 60603

VOTE BY INTERNET
Before The Meeting - Go to **www.proxyvote.com**

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 p.m. EDT April 19, 2021. Have your proxy card in hand when you access the website and follow the instructions to obtain your records and to create an electronic voting instruction form.

During The Meeting - Go to
www.virtualshareholdermeeting.com/NTRS2021

You may attend the meeting via the Internet and vote during the meeting. Have the information that is printed in the box marked by the arrow available and follow the instructions.

VOTE BY PHONE - 1-800-690-6903
Use any touch-tone telephone to transmit your voting instructions up until 11:59 p.m. EDT April 19, 2021. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL
Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Northern Trust Corporation, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717. **Please mail in advance, so that your instruction may be received no later than 11:59 p.m. EDT on April 19, 2021.**

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

D36564-P48615-Z78941 KEEP THIS PORTION FOR YOUR RECORDS

DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

NORTHERN TRUST CORPORATION

The Board of Directors recommends you vote FOR each of the following proposals:

1. Election of 13 Directors		For	Against	Abstain
1a.	Linda Walker Bynoe	☐	☐	☐
1b.	Susan Crown	☐	☐	☐
1c.	Dean M. Harrison	☐	☐	☐
1d.	Jay L. Henderson	☐	☐	☐
1e.	Marcy S. Klevorn	☐	☐	☐
1f.	Siddharth N. (Bobby) Mehta	☐	☐	☐
1g.	Michael G. O'Grady	☐	☐	☐
1h.	Jose Luis Prado	☐	☐	☐
1i.	Thomas E. Richards	☐	☐	☐
1j.	Martin P. Slark	☐	☐	☐
1k.	David H. B. Smith, Jr.	☐	☐	☐
1l.	Donald Thompson	☐	☐	☐
1m.	Charles A. Tribbett III	☐	☐	☐

	For	Against	Abstain
2. Approval, by an advisory vote, of the 2020 compensation of the Corporation's named executive officers.	☐	☐	☐
3. Ratification of the appointment of KPMG LLP as the Corporation's independent registered public accounting firm for the fiscal year ending December 31, 2021.	☐	☐	☐

Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

Signature [PLEASE SIGN WITHIN BOX]	Date	Signature (Joint Owners)	Date

ANNUAL MEETING OF STOCKHOLDERS

April 20, 2021
10:30 a.m. CDT
www.virtualshareholdermeeting.com/NTRS2021

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
You may access the 2021 Notice of Annual Meeting and Proxy Statement and the Annual Report on Form 10-K for the year ended December 31, 2020 by going to the following website: http://materials.proxyvote.com/665859

D36565-P48615-Z78941

NORTHERN TRUST CORPORATION
Annual Meeting of Stockholders
Tuesday, April 20, 2021, 10:30 a.m. CDT
This proxy is solicited by the Board of Directors

The undersigned hereby appoint(s) Michael G. O'Grady and Jason J. Tyler, and each of them, as proxy holders, each with the power of substitution, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this ballot, all shares of common stock of Northern Trust Corporation which the undersigned is/are entitled to vote on the proposals at the Annual Meeting of Stockholders to be held on April 20, 2021, and at any adjournment or postponement thereof (the "Annual Meeting").

If any shares of common stock have been allocated to the undersigned's account under The Northern Trust Company Thrift-Incentive Plan ("TIP"), this proxy card will serve as voting instructions for such shares and the undersigned hereby direct(s) The Northern Trust Company, as trustee of TIP (the "TIP Trustee"), to vote such shares, in the manner specified on this card, at the Annual Meeting. The TIP Trustee will vote allocated shares for which no direction is received and unallocated shares, if any, in the same proportion as the shares for which direction is received, except as otherwise provided in accordance with applicable law. To allow sufficient time for voting by the TIP Trustee, voting instructions must be recorded by 11:59 p.m. EDT on April 15, 2021.

Whether voting by mail, telephone or Internet, the undersigned's shares (including shares held under TIP) will be voted in accordance with the undersigned's instructions. **If this proxy card is returned without indication as to how shares are to be voted, the proxy holders will vote the undersigned's shares, including any held in TIP: for the election of each nominee for director; for the approval, by an advisory vote, of the 2020 compensation of the Corporation's named executive officers; and for the ratification of the appointment of KPMG LLP as the Corporation's independent registered public accounting firm for the fiscal year ending December 31, 2021.**

The proxy holders are authorized to vote those shares for which they receive proxies as they shall determine in their sole discretion on any other business that may properly come before the meeting.

Continued and to be signed on reverse side